PB-230 044

NATIONAL ESTUARINE POLLUTION STUDY. PROCEEDINGS OF THE PUBLIC MEETING HELD AT HARTFORD, CONNECTICUT ON AUGUST 19, 1968

Federal Water Pollution Control Administration
Boston, Massachusetts

1968

DISTRIBUTED BY:

NTIS
National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

PB 230 044

U. S. Department of the Interior
Federal Water Pollution Control Administration
Edison, New Jersey 08817

P R O C E E D I N G S

PUBLIC MEETING

NATIONAL ESTUARINE POLLUTION STUDY

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
NORTHEAST REGION
UNITED STATES DEPARTMENT OF THE INTERIOR

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151

August 19, 1968
9:30 a.m.
Third Floor Auditorium
Travelers Insurance Company
Hartford, Connecticut

I 67.100
Es-C968
vol. 1

POST REPORTING SERVICE
205 Church Street
New Haven, Connecticut

LIBRARY
Dept. of the Interior FWPCA
Edison, N. J. 08817

Edison, N.J. Copy

TABLE OF CONTENTS

PART I - ORAL STATEMENTS PRESENTED AT THE TRAVELERS INSURANCE CO., HARTFORD, CONNECTICUT, AGUUST 19, 1968.

PAGE

Call to Order and Remarks by Lester M. Klashman 5

Speakers:

Wayne Granquist (representing U. S. Senator Ribicoff). 10 4

Chairman Klashman read brief statement for U. S. Representative John S. Monahan. 10 4

G. L. Gunther, Connecticut State Senator 27
Questions by Panel 36 4

John Pickett, Connecticut State Senator (representing himself and U. S. Representative St. Onge) 42 4
Questions by Panel 48

Joseph W. Cooch, M.D., Health Director (representing the Mayor of Milford, Connecticut). 49 4
Questions by Panel 55

Taber de Forest, Director, League of Women Voters. 56 1

Chairman Klashman read telegram received by Robert F. Kunz, Executive Vice-President, Connecticut Conservation Association 62 1

Gay Ewing, Connecticut Association of Conservation Commissioners, Inc. 63 4
Questions by Panel 64

Philip Barske, Wildlife Management Institute 65 1

Myrtle P. Gutman, Connecticut State Representative 71 4

Taras A. Halibey, City Planning Commission, Norwalk, Conn. 72 4
Questions by Panel 74

Ellsworth J. Grant, President, Connecticut River Watershed Council. . 76 1
Questions by Panel 84

Mrs. Robert Watton, President, Aspetuck Land Trust 87 1
Questions by Panel 89

Samuel Allen, Executive Director, Milford Chamber of Commerce. 95 3

Erard A. Matthiessen, Save the Wetlands Committee. 97 1
Questions by Panel 102

Mrs. Benjamin Nangle, Conservation Committee, Town of Woodbridge, Conn. 103 1
Questions by Panel 111

PART I - (Continued)

PAGE

Walter Boardman, Wilderness Society, Conn. 112 1

John W. Lebourveau, Assistant to the Vice-President, Narragansett Electric Co. 116 3
Questions by Panel 122

John Cronin, Div. of Conservation, Rhode Island Dept. of Natural Resources. 130 4

Henry J. Deion, President, Rhode Island Association of Conservation Commissioners. 132 1
Questions by Panel 136

Victor Muniec, Ash Creek Association, Conn. 140 1
Questions by Klashman. 147

Mrs. Victor Muniec 148 1

E. John Hibbard, Secretary, Connecticut Forest and Park Association. . 151 1

Theodore C. Willeford, Principal Sanitary Engineer with the Connecticut State Health Department. 192 4

Mrs. Robert Nangle, League of Women Voters 198 1

Walter S. Boardman read a statement from Professor Bormann 201 2

Edward P. Williams, President of Natural Resources Council of Conn. . 204 1

Mrs. Betty Byrne, Connecticut Valley Action Committee, "CONVAC". . . . 207 1

Walter Hylwa, President, Connecticut Wildlife Federation 208 1

Mrs. Bertrand H. Brown, Private Citizen. 210 1

Dr. Richard Quinton, Chairman of the Mayor's Advisory Council, Bridgeport, Conn. 211 1

Stanley Greimann, Deputy Director, Regional Planning Agency of South Central Connecticut. 213 4

Mrs. Conover, Save the Wetlands, Inc., Conn. Forest and Park Association. 216 1

E. H. Walton, Vice-Pres. of the United Illuminating Co., Conn. . . . 218 3
Questions by Panel 224

Stephen W. Hitchcock, Private Citizen. 227 1

George Lebetkin, Private Citizen 228 1

Thomas ODell, Westbrook Conservation Commission. 229
Questions by Panel 239 1

PART I - (Continued)

PAGE

J. Stanley Quickmire, Jr., Northeastern Field Representative of the National Audubon Society 240 1
Questions by Panel 246

Russell Hicock, Senior Vice-President of the Northeast Utilities, Conn. 248 3
Questions by Panel 259

Mrs. Edward Miller Mc Clure, Individual Property Owner 263 1
Questions by Panel 271

Letter read by Chairman Klashman from Mr. Arthur W. Sweeton, Deputy Manager and Chief Engineer, Bureau of Public Works, The Metropolitan District of Hartford, Connecticut. 272 4

Letter read by Cnairman Klashman from Frank Leigner, Jr., Chairman of the Southeastern Connecticut Regional Planning Agency 278 4

Richard J. Benoit, Chief of Marine Sciences at General Dynamics Electric Boat Division in Groton, Conn. 282 1

Richard Carpenter, Planning Director of the Southwestern Regional Planning Agency in Norwalk, Conn. 283 1

Adjournment. 290

PART II - WRITTEN STATEMENTS

1-2-3-4
11-0-2-10

E. J. Bontya, Engineer of Shellfisheries, (Representing the Conn. State Shellfish Commission 301 4

Richard J. Quinton (Representing Mayor's Conservation Advisory Council, City of Bridgeport, Conn.) 305 4

Connecticut Valley Action Committee, Inc. 306 1

Mrs. Paul W. Dale, on behalf of the Greenwich Conn. League of Women Voters and the Mianus River Garden Club. 309 1

F. Patrick McKegney, M.D., Pres., Guilford Land Conservation Trust, Connecticut. 312 1

Ruth Jacob, Private Citizen, Darien, Conn. 313 1

Ann Morrill, Secretary, Laurel Park Improvement Association, Inc. Warren, Rhode Island 315 1

Mrs. Carolyn Demko, Laurel Park Improvement Association, Inc. Warren, Rhode Island 324 1

Katherine Marchant, Private Citizen, Madison, Connecticut. 326 1

J. Stanley Quickmire, Jr., Northeast Field Representative, National Society, Harwinton, Connecticut. 327 1

PART II - (Continued)

PAGE

Thomas M. ODell, Chairman, Westbrook Conservation Commission. . . . 332 1

William A. Niering, Professor of Botony and Director of Connecticut Aboretum 335 2

Raymond L. Davignon, State of Rhode Island and Providence Plantations 337 4

Erich A. O'D. Taylor, State of Rhode Island and Providence Plantations 338 4

Daniel G. Dobbins, President, Seagate Association, Inc., Darien, Connecticut 345 1

Jocelyn T. Shaw, Chairman, Mill River Wetland Committee 347 1

Theodore J. Smayda, Associate Professor of Oceanography and Botany, Narragansett Marine Laboratory, University of Rhode Island. 349 2

William H. Smith, Clinton, Conn. Conservation Commission 352 1

Dr. Richard H. Goodwin, Chairman, Dept. of Botany, Connecticut College 354 2

Gordon Loery, President, Connecticut Audubon Council. 358 1

Arthur W. Sweeton, Deputy Manager and Chief Engineer, Bureau of Public Works, Hartford, Connecticut. 359 4

Edward G. Atwood, Mayor of East Hartford, Conn. 363a 4

APPENDICES

List of Participants at Hartford, Connecticut Public Meeting 364

List of Other Attendees at Hartford, Connecticut Public Meeting. . . 368

INDEX (by Speaker, Author, and Organization) 373

1-2-3-4

13-3-0-6 22

PART I

. . . Public Meeting held by the Federal Water Pollution Control Administration, Northeast Region, United States Department of the Interior, on the impact of pollution on coastal and estuarine waters, held at 9:30 a.m., August 19, 1968 at the Travelers Insurance Company's Third Floor Auditorium, 57 Prospect Street, Hartford, Connecticut, at which time the panel consisted of the following members:

MR. LESTER M. KLASHMAN, Chairman
Regional Director, Northeast Region
Federal Water Pollution Control Administration

MR. GEORGE COWHERD
Assistant Chief Engineer
Interstate Sanitation Commission

MR. JOHN CURRY
Director of Water Resources
Connecticut Department of Agriculture & Natural Resources

MR. LOUIS De CAMP
Acting Chief, Office of Estuarine Studies
Federal Water Pollution Control Administration

MR. WALTER NEWMAN
Staff Member
New England River Basins Commission

MR. ALFRED PELOQUIN
Executive Secretary
New England Interstate Water Pollution Control Commission

MR. WALTER SHEA
Assistant Director, Environmental Health
Rhode Island Department of Health . . .

CHAIRMAN KLASHMAN: The meeting will come to order.

Good morning, ladies and gentlemen, and welcome to our meeting.

My name is Lester M. Klashman and I am Regional Director for the Northeast Region of the Federal Water Pollution Control Administration. We are all here because we feel our coastal and estuarine waters are among our most precious resources.

The purpose of this public meeting is to have your views on the tidal waters of Connecticut and Rhode Island. If anyone from any other part of the country is interested in making a statement, we will, of course, be very happy to accept that too.

We are interested in what do you think of the values of an estuary (aesthetic, recreational, dollar)?

What should the future of coastal zones be?

What are the best uses?

What system of management will best provide for development of our coastal resources?

This public meeting is the third of five in the Northeast Region. Others will be at Portland on September 10, and Boston on October 8. These meetings are being held in accordance with the Clean Water Restoration Act of 1966. The Federal Water Pollution Control Administration is charged by the Congress of the United States to prepare a comprehensive report of the status of water pollution in the Nation's coastal waters. The report will identify the actions needed to assure wise use of the total resources of our coastal zones so that not only will degradation of our valuable coastal waters be avoided, but also the quality of our waters may be enhanced. This effort is known as the National Estuarine Pollution Study. The report is scheduled for completion and submittal to the Congress on November 1, 1969. It will provide the Congress with the information it needs to draft legislation bearing on prevention and abatement of pollution in the Nation's coastal waters.

Because they feel our estuarine and coastal waters are so important, the States of Connecticut and Rhode Island, the Interstate Sanitation Commission, The New England River Basins Commission and the New England

Interstate Water Pollution Control Commission have joined the Federal Water Pollution Control Administration in co-sponsoring this public meeting.

The Governors of each State have designated a liaison man for this National Estuarine Pollution Study:

For Connecticut - Mr. Joseph Gill, Agriculture & Natural Resources Commission~~er~~,here represented by Mr. John Curry, on my left, who is the director and chief engineer of the Connecticut Water Resources Commission.

Our representative from Rhode Island,* ~~Mr. Walter Shea, Environmental Sciences Director.~~ ~~He has not arrived but when he does we will introduce him to you.~~

These men are channelling information from the various agencies in their states directly to the FWPCA's Office of Estuarine Studies, whose acting chief is Mr. Louis De Camp, on my extreme left, who is with the Federal Pollution Control Administration in our Washington office.

This is also true for other federal agencies and for the Interstate Sanitation Commission, here represented by Mr. Cowherd, on my extreme right.

The New England River Basin Commission, by Mr. Walter Newman, over here on my left, and for the New England Interstate Water Pollution Control Commission, by Mr. Alfred Peloquin, who we hope will be here shortly.

We sent over 500 invitations to all organizations which we thought had an interest. However, please be assured that this is a public meeting and statements from all are welcome.

Those of you wishing to speak should have so indicated on the registration cards you made out when you entered. If you have not done so, I would appreciate it if you would do so as soon as possible. You will be asked to come to the rostrum in turn. The panel members may wish to ask clarifying questions, but we are not prepared to entertain questions from the floor. Our purpose is to collect information, and not to provide a forum for debate. If you decide to make a statement, and have not yet so indicated on your registration card, again I ask you ~~again~~ please ~~inform~~ let the secretary at the registration table outside in the hall~~,~~ know.

Those of you wishing to submit written statements either now or in the next few weeks are welcome to do so. The secretary will take them from you or tell you where to mail them. We have already received written statements, or promises of statements, from:

1. The Connecticut River Watershed Council, Inc.

2. The Metropolitan District Commission in Hartford County.

3. The Clinton Conservation Commission.

4. The Rhode Island State Representative Raymond L. ~~D'Avino~~. Davison

5. The Guilford Land Conservation Trust, Inc.

6. The Southeastern Connecticut Regional Planning Agency.

We have a 35 millimeter slide projector and an overhead projector. Please inform the secretary in advance if you wish to use these ~~or~~ if you have your own projection equipment, We ~~will~~ would be very happy to operate it for you.

These proceedings are being taken by a reporter and will be ~~published~~ ~~and~~ sent to you. Mr. Sandell of the Post Reporting Service is our reporter. [I too just had the opportunity to meet him.] This is why we need your address on the registration cards. The written submissions will be included in the record./ Mr. Reporter would you please identify yourself If you are planning to speak and have a written copy or outline, it would greatly aid the recorder if you let our secretary make a xerox copy of it in advance. We would also be pleased to make copies ~~fo~~ for the press and the panel, if time permits.

Thank you for your interest in these coastal waters which are among our most precious resources. Your thoughtful participation in this meeting will be helpful in providing for their protection and development.

Our first speaker today will be Mr. Wayne Granquist, representing Senator Abe Ribicoff.

While Mr. Granquist is coming to the podium, I would like to introduce Mr. Walter Shea from the Rhode Island Department of Health and Mr. Alfred Peloquin of the New England Interstate Water Pollution Control Commission.

Mr. Granquist.

MR. WAYNE GRANQUIST: Mr. Klashman, members of the panel: first I want to express Senator Ribicoff's appreciation for the work all of you are doing for clean water and conservation of our environment.

Secondly, I want to express his regret that he cannot be here himself today. He is in Washington, as you may know, testifying before the Platform Committee of a party which will remain nameless ~~as~~ because I think ~~this is~~ these are ~~a~~ non-partisan ~~meeting.~~ proceedings.

This is Senator Ribicoff's statement:

Mr. Chairman, I appreciate the opportunity and privilege to present a statement before this meeting.

Estuaries or estuarine areas are particularly difficult to describe. They have many facets and faces -- all of great benefit to Americans.

An estuarine area is a seashore or a river -- a salt marsh or tidal basin. It can be found immediately on the seashore or miles inland at the extreme reaches of the tide's flow. To be more precise, an ~~estuarine area~~ estuary is where the salt of the sea meets fresh water.

Estuaries are different things to different people. To some they may be places of great scenic beauty. To others they have major recreational potential. And to still others, they may be locations of commercial or industrial value. In addition, we know they are a prime natural resource, which sustains a wide variety of marine life. Most likely, an estuarine area is all of these at one time, and because of this, they provoke competing interests which, in the past, have led often to haphazard and disastrous results for these great natural assets.

An estuarine area is roughly that narrow border between land and sea. Its very uniqueness and potential make it a subject of both value and concern.

Because of the restricted nature of this borderline, we do not have unlimited estuarine resources, and we are perilously close to destroying the major part of these natural land-sea complexes for the future.

This would be a tragic loss. ~~Estuarine areas~~ Estuaries are the breeding grounds and nurseries for much of the commercial fish life which eventually becomes an essential part of our daily diet. It has been estimated that over 65% of our commercial fish and shell fish crop spend all or part of their life cycle in estuarine areas. Likewise, coastal and inland marshes are nesting places or wintering grounds for water fowl. And scientists find estuaries to be living laboratories for the study of all types of marine life.

~~Additionally,~~ Estuarine areas are locations of great beauty and recreational potential. They can be a home for the hunter and the fisherman. They provide areas for boating and fishing. Salt marshes are often places of uniquely scenic stillness -- a refuge from the hurly-burly of everyday life.

But these benefits are in great jeopardy of being lost for the simple reason that estuaries offer great potential for other uses.

The obvious attributes of a safe river harbor have fostered the growth of large cities at the mouths of our major rivers. Easy access to free power has spawned the development of industrial complexes along our estuarine areas. Our national defensive apparatus is immeasurably strengthened by naval installations spaced along our coastline. And, with the recognition of recreational opportunities in these areas, commercial establishments have sprung up in clusters near estuaries.

These developments are not inherently dangerous, but are, in fact necessary to our continued growth and progress. Yet they have given rise to destructive by-products which directly threaten the existence of our estuarine areas.

Urban areas, with their commerical, industrial and residential adjuncts, have seriously polluted not only the shoreline ~~[illegible]~~, but the many rivers and streams which flow to the sea. Unfortunately, the United States Navy has added its own waste to this pollution. Likewise, the haphazard dredging and filling of marshes along our shore~~[illegible]~~s has significantly hastened the destruction of our ~~wetlands~~ marshlands.

In fact, our estuaries are presently under serious and sustained attack. The foe is our American civilization and the unremitting demands we continue to make upon our own environment. Slowly but surely, our estuarine areas are disappearing.

In 1914, Connecticut possessed more than 23,000 acres of salt water or brackish marshes. By 1964 almost half of these had been destroyed, and this destruction -- primarily the result of dredging and dumping activities -- continues at the rate of over 1% a year.

Pollution of all kinds is also spreading its peculiar havoc. Of the 27 Connecticut towns which were once able to harvest and sell shellfish, directly to the public, 25 have now been ~~now have banned~~ the products from some of their fishing grounds from direct public consumption for health reasons.

Of course, this has not been purposeful pollution or destruction. Indeed, much of the damage has been done in the name, and even the spirit, of progress. But the results have been shameful and wasteful nevertheless.

Almost a year ago, I introduced legislation designed to protect our estuarine resources. I called for greater cooperation between state, local and federal agencies in the preservation and management of these priceless assets. I suggested that Congress, with the advice of the Department of the Interior, designate

National Estuarine Areas which would be protected and developed as integral units. And on a more local level, I have sponsored legislation calling for a full study of Long Island Sound to make recommendations as to the most fruitful and efficient development of this great national treasure.

Similarly, I have supported and voted consistently for measures which would assist municipalities in developing better ways to handle their sewage so as to prevent unnecessary pollution.

This meeting is a part of the national study undertaken by the Department of the Interior into the problem of pollution of our estuarine areas. In addition, the Department has been authorized by Congress to develop recommendations for the future development of these areas.

I believe this study has a particularly difficult but potentially rewarding task before it. It must reconcile the competing and sometimes conflicting demands which our society inflicts on our estuarine areas. This is, in effect, a microcosm, of the basic problems which affect a free society. Much of what is said here this morning will reflect differences in approach, but we must learn to accommodate these differences in pursuit of the goal of the most effective use of our natural resources.

Before letting the experts on estuarine affairs take their rightful place at this podium, I would like to make three general recommendations.

First, I believe we should make greater use of our estuarine areas for recreational purposes. As our society becomes increasingly urbanized we must make greater efforts to provide opportunities for uninhibited contact with our natural environment. The recreational potential of our shorelines has scarcely been tapped, and I believe it is incumbent upon this study to recommend means to increase the utilization of this potential.

Second,ly we must take immediate steps to curb the devastating pollution of these areas. While recognizing the rightful place of commerce and industry in our society, we must provide the means and encouragement to polluters to mend their ways in the public interest.

Third, and perhaps most important, I suggest that this study emphasize the search for the answers required to establish a comprehensive plan for the development of our estuarine resources [redacted] consistent with the needs and requirements of a growing and dynamic society.

With the help of public and private interests, we have what may be our last opportunity to preserve and manage these rapidly disappearing natural assets. Thank you Mr. Chairman.

CHAIRMAN KLASHMAN: * I would like to just read a brief statement from Congressman Monagan. Monahan His entire ~~Congressman~~ ~~Managan's~~ statement will go on ~~be placed in~~ the record. (I would like to read the conclusions and a few general) goals. Congressman M. regretted that he was unable to attend and his statement will be placed in the Record.

U.S. REPRESENTATIVE JOHN S. MONAGAN: Mr. Chairman, I welcome the opportunity to discuss with you a topic of extreme importance: the preservation and development of our Nation's estuaries. Although they cover only about one percent of the area of our country, they hold the balance of life as we have known it, and for the present, and for the future. I view this study as significantly urgent to our overall national endeavor for the control of water pollution.

As with so many resources in our abundant land, the estuary areas have had an important role in our natural and economic history -- a role which is increasing even as their size diminishes. In the last two decades, over 7 percent of important fish and wildlife estuarine habitat throughout the country has been lost by dredging and filling. In connecticut the area lost is

over 10 percent. The loss to pollution is still undetermined. Increasingly we have overlooked the relevance of our responsibility to preserve and to develop them. It is perhaps our last opportunity to meet the obligations of the future.

Estuaries are the birthplace of life itself. They are dynamic areas where sea and land meet in an environment of natural, anthropological, and social importance. About one-third of our Nation's population lives and works near them. If we fail to act decisively now, their many benefits will be irretrievably lost.

The tasks which lie before us are great, and our meeting today is a necessary step to their completion. I am confident that we are able to control and develop this significant resource, and wish to offer a few suggestions which may help us on the way.

Historically our estuaries have been tremendously productive, and have afforded us Nature's food and shelter from the sea. This natural wealth has been essential for our burgeoning nation and economy. Our estuaries have been the base for our natural growth and historical development, and they remain today an integral -- but finite -- resource of this country. Our coastlines have

tremendous value, both in natural and economic terms. The reconciliation of these two values, with those of our society, will be our overriding challenge during the decades ahead.

We in Congress are now attempting to define a national policy for thepreservation and development of our environment.

In the field of water pollution, I am well aware of the attention and achievements of Congress in the last few years, and as ranking member of the Natural Resources and Power Subcommittee of the House Committee on Government Operations have participated in many aspects of the Congressional role. Since 1963 our Subcommittee has held hearings throughout the country to define the extent of the pollution problem and to recommend solutions. This 5-year survey included an on-site inspection of the Connecticut River and its estuary and a tour of the major waterways and estuaries of our State over which I presided in 1963. These studies, and their subsequent reports, focused attention on the wide range of problems connected with water pollution and led to the establishment of the Federal Water Pollution Control Administration and the current efforts now being conducted by the Federal

Government to combat pollution.

As a Member of Congress I have filed a number of bills to attack particular water-pollution problems, including proposals to authorize additional funds for water pollution control through the construction of sewage treatment facilities, and accelerated research programs. Another bill which I introduced last year would provide penalties against boat owners in instances of negligence substantially endangering desirable marine, aquatic, or other plant or animal life of the navigable waters of the United States.

Real progress has been made as a result of Congressional action in the vast and difficult field of the pollution of lakes, rivers, and streams. I am certain that our current efforts to preserve and develop the estuaries will -- with your cooperation -- significantly improve and enhance this valuable resource.

For most of our history as a Nation, economic development has been a justification for exploiting our landscape and seashore. Estuaries form 80-90 percent of the Atlantic and Gulf shores, and 10-20 percent of the Pacific shore. Yet, only in the last few years have National Seashores been established at Fire Island, N.Y.;

Cape Code, Mass.; Cape Hatteras, N.C.; Padre Island, Texas; and Point Reyes, Calif. Much remains to be done, and the time is running out. At the moment, for example, only about 3 percent of the Atlantic shoreline is available for public use.

National affluence has made us aware of the things which money cannot buy. An industrial complex or airport constructed in an estuary area can be estimated to cost "x" dollars, provide "y" goods or services, and return "z" profits or taxes. But that same area, if allowed to remain in its natural state, would provide an environment for wildlife,boating, swimming, sport and commercial fishing, the growth and harvesting of clams, crabs, and other aquatic life, and assure a continued ecological balance. That situation cannot be duplicated at any price.

Must we continue to accept the expansion of our technology as an inevitable fact of natural evolution, and in the name of "progress" and a rising Gross National Product? I say no. At the present time we still have the means to determine these options. I hope that we are able to meet our obligations to ourselves and our posterity, and to act with foresight and wisdom.

As we look to the future of our estuaries, and as we project our data to the years 1975, 1985 and 2000, the most striking fact is the lack of coordination and effective control to direct the orderly and rational use of the remaining areas. The Army Corps of Engineers has authority to determine the advisability of a particular channel dredge or bay fill -- but only with regard to the question of navigation. An informal agreement with the Corps and the Department of Interior to allow for the consideration of natural and recreational uses has not been entirely effective, for in all but a few cases problems of engineering have superseded preferences of aesthetics or conservation. But they are not the only body to blame. Many local and municipal governments which surround our estuaries have also been lax by permitting the commercial development of these important areas. And finally, the conservationists have not done all that they could do either, since in many cases their pursuit of primordial excellence has led to demands which are unrealistic.

Economic interests have developed their values very effectively. It is much more difficult -- and some would say impossible -- to quantify aesthetic values. But this we must attempt to do, on the Federal, State, Local and personal levels, if the preservation and development of our estuaries is to be effected rationally and responsibly.

As our experience has shown when studying and planning to combat water pollution in lakes, rivers, streams, and estuaries, Congress is now working to find a policy which will reconcile human development with our remaining natural resources. Previously such a reconciliation was not attempted, and considerations had been simple either/or propositions, with the conservationists on the one side calling for total preservation, and developers on the other side insisting on the merits of commercial progress. The developers usually won out, or, at best, the conservationists arranged a temporary stay of execution. Now we are becoming more aware that our remaining estuaries are seriously threatened and that an equitable balance between progress and preservation must be found. In the words of Laurance Rockefeller, Chairman of The President's Council on Recreation and Natural Beauty, we should strike some "constructive compromise" between man's progressive development and his natural inheritance. To date few practical results have been achieved in that attempt.

I do not propose an all-inclusive solution to the complicated problems of preservation and development. Indeed, I doubt that any all-inclusive remedy is possible, given the variety of estuary areas themselves and the inherent powers and traditions of local, State, and Federal authority. Rather, I would like to propose a few general goals:

1) Pollution is an immediate threat to the present and future condition of our estuaries. We cannot underestimate the danger of this threat, for by doing so we may find that though the areas might be physically preserved their ecological balance would be destroyed in the meanwhile. Following the requirements of the Water Quality Act of 1965, Connecticut has made significant progress ~~by~~ in the establishment of coastal water quality standards. These standards, which were approved by the Secretary of the Interior in February should be constantly improved, and vigorously -- but fairly -- enforced.

2) Authority through law should be expanded. On August 3, 1968, President Johnson signed into law a significant piece of legislation, PL 90-454 to authorize the Secretary of the Interior, ~~in~~ to cooperation with the States, to conduct an inventory and study of the Nation's

estuaries and their natural resources. This is an important step forward, but it is not enough. With our estuaries diminishing at their present rate we should continue to ask how laws for their protection and development might be improved. And we should be attentive to their enforcement. To do less is irresponsible.

The Corps of Engineers has the authority over engineering and navigational matters, and in this regard they do an admirable job. Federal Departments should be required by law to place greater emphasis on aesthetic and natural considerations. The States should also exercise their share of control, as for example with the supervision of fossil-fuel power plants. The Atomic Energy Commission should be cognizant of the effects of thermal discharge on waters and estuaries when authorizing the construction of power facilities. And the localities should be sure to encourage the non-commercial aspects of zoning and town planning. In short, the responsibility is with all of us, and only its vigorous exercise will insure the future of our estuaries.

3) It is encouraging to note that the Department of the Interior is acquiring land for public use. This is an example which should be followed by State and local

agencies, particularly for the protection of estuarine zones. Commercial development has had its way for too long. Now is the time for responsible government agencies on all levels to act. The estuaries are more than preferential real estate. They form the region of life itself.

4) Finally, I believe that we should strive to be as practical as possible. Congress must deal in practical alternatives, not vague implications, tentative conclusions, or distant goals drawn from further mountains of statistical data. Legislative and financial support is needed for the protection and development of our estuaries and this requires compromise and concession on all sides. We in Congress have taken some bold steps forward. But we can only be the representatives of the people and their experts. I am certain that we can rely on your experience and wisdom to assist us in this essential task.

CHAIRMAN KLASHMAN: We are grateful to Congressman Mona$\overset{H}{g}$an for his statement.

I would now like to call on Connecticut's State Senator Dr. G.L. Gunther.

We have a number of statements to be made. and so We are asking, if possible, for each of the statements to be limited to about ten minutes. If the statements are longer than that we can place the entire statement in the record.

Thank you.

SENATOR G.L. GUNTHER: Mr. Chairman, members of the Committee: I am Senator Gunther, 21st District representing Milford and Stratford.

I would like to address myself primarily to the specific questions raised by your notice of this public meeting on estuarian pollution.

The first question, what are the values of our estuaries?

Unquestionably you will hear volumes of opinions on the aesthetic and recreational values. I would like to concentrate on the economic and commercial value. In the Mil-ford-Stratford area that I represent, we are making a valiant attempt to reclaim the oyster industry that was, at the turn of the century, a major industry worth millions in annual income. Today it is reduced to a minimum because of pollution, predators, and possibly the lack of food. We can control predators but if the marshlands are not preserved and made more productive, the vital food sources for all fin and shellfish will be lost.

If we don't retain what is left of our marshlands and eliminate our pollution, it could also affect the commercial and recreational fisheries of our area, as these are also dependent on the estuaries for breeding and feeding. This also represents a sizeable commercial value in our area as much of our boating, sporting goods, bait and fishing supply businesses depend on this valuable asset. It brings money into the stores and taxes into our towns.

At present our commercial fisheries are at a minimum. This could be greatly expanded with modern technology and equipment, but we will have to have the unpolluted estuaries to insure continued supplies of these fin and shellfish.

Two years ago a speaker at a "Save the Wetlands" meeting predicted that the U.S. will reach their maximum of protein food production, on the land that we now have, by 1985. With an anticipated population growth of 100 per cent by the year 2000 the U.S. could be in trouble if we do not increase or find new sources of protein food. The sea has the greatest potential and without the estuaries this potential would be decreased, if not impossible.

Unfortunately, these lands have a very high value in our suburban area for commercial and marina development, and unless some compatible program can be developed with the two interests, the economics of development will find greater public support and lead to a total loss of the estuaries.

Two, how have they been damaged by pollution, and how much?

They have been damaged by unsanitary sewage, industrial pollutants, and silting. To what degree and how, is something that I feel should have been studied and developed either by the State or Federal Agencies, if it hasn't been studied by now.

As laymen, we can only look at what we had previously, and what exists now, and assume that the losses are the result of several things, pollution being one of the worst. At present the clams and oysters have been reduced or minimized and are inedible in our area; blue-crabs have almost disappeared; fish and aquatic plant growth are found only in the lower estuarian areas of our rivers. Years ago Atlantic salmon, sturgeon, shad, and many other species of fish were plentiful, as well as many species of birds.

Silting has smothered our clam and oyster beds, built up our marshland, encouraging undesirable plant growth, and has rendered parts of our rivers inaccessible for recreational and commercial boating by filling in our channels.

Over one year ago, I requested a study of the industrial pollution in Long Island Sound from New Haven to Norwalk. Your Commission accepted this proposal and to date I have not seen a report on this study, but I have seen several news releases by Congressmen about the pollution rating in some of our harbors. Just two months ago we had a 90 per cent "kill" of oysters in the Bridgeport area which authoritative persons think were caused by industrial pollution. Specimens were sent to your laboratories, and because of a personnel shortage it was going to take them 30 to 60 days before they could analyze them and determine what the causative factors were. As yet we have no answers to what caused the "kill", and if it was industrial pollution, no enforcement of its abatement.

When you ask about pollution in our area, it is rather interesting that with our new federal and state laws and all the concern about pollution, a federally financed redevelopment project in the City of Bridgeport is reported to have reestablished a combined storm and sanitary sewer in their Lafayette Plaza Project, brought it down to a depot near Bridgeport Harbor which has an overflow into the Harbor itself. Certainly not a very aggressive attitude to eliminate pollution in this day and age -- and financed with federal money.

In 1963 the Jones Subcommittee of Congress held a hearing in Hartford on industrial pollution. At that meeting a sizeable document was presented which listed the major sources of industrial pollution on the three major rivers of Connecticut. This documentation had been compiled by the Connecticut Water Resources Commission prior to 1963, was very comprehensive, but I dare say that the majority of these industries continue to pour their untreated waters into the rivers and streams of Connecticut five years later and 16 months after the passage of Connecticut's "Clean Water Act".

Questions three and four are synonymous -- what is the best use of our estuaries now and in the future?

We have already lost 50 per cent of the marshlands of Connecticut. What would be ideal is if all development of the estuaries were stopped and we immediately instituted a program to clean up our pollution, silting, and reclaim areas that have been destroyed or have had their fertility reduced. However, this is not a very practical suggestion. Unfortunately, most of these estuarine areas are privately owned. These owners have a right to use of their land. What would be a practical approach to the problem is that an immediate moratorium be called on all development of our marshlands. An immediate study should be implemented to determine what areas should be developed, and for what purpose. The balance then should be acquired under a state and federal program. These areas rightly belong in public ownership and should be preserved for future generations.

Programs should be instituted where reclamation of our rivers can be implemented that are compatible to conservation interest, reestablishing our streams as active fish and wildlife areas. If ecological studies have not been conducted in this area, they should be done immediately so that we know what we have and what can be done to enhance the ecology of the areas.

This thought brings me to another area of pollution that should be studied immediately, as it is not currently with us, but will be in the very near future. That is thermal pollution from atomic energy plants that are currently being planned in our area. Right now Charles Island and Cockenoe Island are owned by local utility companies and scheduled for future atomic power plant construction. There is no question in my mind that compatible programs must be and can be developed. At present a steam powered generating plant is operating in the Northport, Long Island area where the water temperature is being controlled and used in conjunction with an oyster farming program. Done properly, these atomic generation plants could enhance our ecology and aid our conservation programs. If this cannot be done, they should be prohibited from constructing these plants in this area.

Although this is not immediately involved in the estuarine areas, I feel the Interior Department had better become actively involved in many of the studies that are currently being conducted in the proposals for bridges and airports in Long Island Sound. This is another area [redacted] that I question the feasibility, advisability and compatibility of such programs. If they are going to be considered then certainly we should be in on the preliminary studies, not when they are ready to pour concrete.

Finally, I am very critical of the water standards and our "Clean Water Program" in Connecticut.

Our water standards hearings were conducted during the closing days of the 1967 Session of the Connecticut Legislature and many knowledgeable legislators were unable to attend them. In addition, there was no advance publishing of the standards so that they could be studied by those city officials attending the hearing. The standards were subsequently submitted to your Department and accepted. Very few people in the State of Connecticut have ever seen them or know exactly what they are all about.

Recently I have seen a release by Secretary of the Interior Udall which was critical of our "accepted" standards. I personally feel that they are a downgrading of the only previous standards that Connecticut has been operating with, the "Bathing Beach Survey". This was a criteria for bacterial levels for safe bathing and have been accepted for years by the public. A comparison of these two standards in the bacterial levels are:

Bathing Beach Survey E Coliform Count	New Fresh Water Coliform	New Sale Water Coliform
Class A-0 to 50	Median of 100, not more 10%-500	SA 70-10% 230 to 330
B-51 to 500	Median of 1000,not more 20%-2400	SB 700-10% 2300
C-501 to 1000	Not to impair use	SC not to impair use
D-Over 1000	" " " "	SD " " " "

In the past 16 months of our Public Act 57 (Clean Water Bill), I fail to see that any great strides have been taken in water pollution abatement in Connecticut. I have been able to get only limited answers from the Connecticut Water Resources Commission on our industrial pollution abatement and, from what information I have received, it would indicate that we are getting less than 50 per cent compliance to the orders from this department on industrial pollution,a~~batement.~~

I personally feel that the federal government should have set up minimal standards and then allow the states to adopt more stringent standards as they see fit. Apparently, the oppositeis the case. We are not going to lick our water pollution problems until we adopt a "Get tough" attitude and penalize all offenders that do not conform to our laws.

Thank you.

MR. LOUIS De CAMP: We are very interested in just exactly what you talked about but one of the interests we have, and requirements, one of the main responsibilities we have is to recommend a form of management for the estuaries. This form must include the recommended responsibilities of the federal government, the state governments and the local governments and the interests of private organizations.

My question to you, Dr. Gunther, would be have you any ideas or recommendations on what should be the responsibilities of the various echelons of government, fully realizing that these waters are, should we say, sovereign state territory?

SENATOR GUNTHER: Again, I think I have touched a bit on that, Mr. De Camp. I think it is pretty difficult on a local level. We have found this: I think the Town of Fairfield zoned the marshlands as a flood plain zone. They were taken into the courts and the courts ruled against them. The courts said they had no right to zone this for the flood plain zone without the interest of the man being protected who owned the land ~~being protected,~~ that they would probably have to purchase it or do something either by easement or some adjustment to that man.

Even on the state level, I don't know, I think that other states, such as Rhode Island and Massachusetts, have a little more definitive definition of where the state's title to the marshlands lies. This we don't have in the State of Connecticut. I do think that this is an area where the state could actually get into it and set up this very definite line of demarcation as to where our title is in the state, but that still does not protect the marshlands as it should be.

I think the ultimate goal that we are going to have to have, and the only way that we are going to solve this problem, as a combined effort is to have pretty much the same program as the open spaces program under Title 7 of the, House Home + Finance, I think it is HUD now, where we are going to specifically have to go after these estuarianeareas and set up a very definite crash program with financing by the federal government and the state government cooperating, I mean realistically.

I think we have $100,000 set up in the state for salt water marshes and I think it is $40,000 or somewhere in that area now for the fresh water marshes. This is like a breath in the breeze. I mean we are not being very realistic about it. We have got to sit down and set up a finance program plus a study program to find out what areas we can let go, as it were. In other words, there has got to be some compatibility here where we can say, "Yes, that can be a marina or that can be an industrial development but let's stop the line here and no further intrusion into this particular marshlands area.

I don't know if that answers your question but --

MR. De CAMP: It helps.

SENATOR GUNTHER: If I had the answer, I don't think any of us would be up here.

CHAIRMAN KLASHMAN: Are there any other questions? Mr. Newman?

MR. WALTER NEWMAN: I would just like to comment that there is a decision that was rendered by the courts in the highest court in Massachusetts which indicates that a person own property and could use it as he wished so long as it was not to the detriment of the public.

That suit was challenged, and I think it went to the Supreme Court. I am not sure whether a ruling has finally come down on it, but, nevertheless, I think this is quite significant in terms of the management of the estuarine areas, that is, so long as a person owns land and uses it to the benefit of the public and not to the detriment of the public, then he can make reasonable use of it. I think it is very important.

One question I would like to ask: do you have any idea of what magnitude, what order of magnitude, say, an acquisition program for the State of Connecticut, a reasonable acquisition program for the State of Connecticut in estuaries might run?

SENATOR GUNTHER: No, I have none at all. I think that this, again, would take study because in the Milford-Stratford area I can tell you you can't touch these marshes for less than $6 to $8,000 an acre. There are other sections of the state where I understand acquisitions have been made for as low as $500 an acre.

So that in order to come up with any realistic figure at all, I would be at a loss to come up with any figure.

Again, I think these are the areas which ought to be ~~studied.~~ Studying. In fact, I am sorry, if they are not being studied right now, they should have been because we knew this thing was coming. It seems that we always get at meetings of this nature the preachers talking to the preachers. I think it is about time we stopped talking and really got down to some business because before we know it they are all going to be gone and we are going to be looking back and saying, "We should have done it."

I think if we can only get a moratorium on all development, even if it is a matter of a year or two so that we can conduct studies as to what should be allowed to be destroyed and what should be preserved, at least 'til we have something to present. The way things are going now we are losing hundreds and hundreds of acres every year.

So that I don't have the answers.

CHAIRMAN KLASHMAN: Senator Gunther, Dr. Gunther, could I just ask you one other question? You were making some comments or you made some comments about the numbers that the Connecticut Water Resources Commission had submitted for their standards. You had other numbers which had been previously used which you thought were better.

Do you have something to tell us about why you think these are better? Do you have any evidence to show why one set of numbers is better than another?

In other words, as I understand it, the Water Resources Commission in its best judgment and the Secretary of the Interior in his best judgment accepted these. Now, do you have some evidence to show that some other set is better?

SENATOR GUNTHER: Well, let me say this, Mr. Klashman, I think when we are comparing a Class A bathing beach, which again, the general public has come to accept this as a Class A. They realize there are only a maximum of 50 coliforms in that area. They know this is a very safe area.

Now, when we are talking about the new Class A which allows in the fresh water, I think it is a median of a thousand -- I am sorry, I would have to check my notes for a moment, I get balled up with numbers -- when we now have a median of 100, which is twice the allowable coliforms that we had before, and not more than ten per cent 500, and then in the salt water 70 and not more than 230 to 330, as far as ten per cent area, I think we are dealing with numbers.

As far as saying which one would be better --

CHAIRMAN KLASHMAN: What I am asking you, Dr. Gunther, when you are talking about 50 or 100 or 70 or 230, if you have an understanding of the way the tests are made you would realize you are talking fundamentally about the same numbers. Do you have reason to believe that this is not true because, if so, I would like to know.

I don't think this is the proper place to discuss it but I would like very much to talk to you about it later.

SENATOR GUNTHER: I tried to get some information on this, Mr. Klashman. I have asked for information on this but I don't seem to be able to get a straight answer.

When I say this, I can show you correspondence where I have asked what is the difference between the fecal effectual coli count which you people want, apparently, in the State of Connecticut, what is the coliform and what is the difference between that and the E coliform counts. I don't happen to be one of the lab men and don't have all the answers on the specific procedures and the comparisons or anything else, but I would like to know.

CHAIRMAN KLASHMAN: Thank you, you have answered my question.

SENATOR GUNTHER: Thank you very much.

CHAIRMAN KLASHMAN: I would like now to call on Senator Pickett.

Senator, are you representing --

SENATOR JOHN PICKETT: I am representing Congressman St. Onge and myself.

CHAIRMAN KLASHMAN: Thank you.

SENATOR PICKETT: Mr. Klashman and members of the panel: I am State Senator John Pickett of Middletown representing myself and Congressman St. Onge.

For identification purposes only, Congressman St. Onge's district includes the four counties of Eastern Connecticut, running from Massachusetts to Long Island Sound and, of course, on the east along the Rhode Island border. My ~~state~~ senatorial district consists of seven towns along the Connecticut River, roughly in the center of the state.

My remarks will be those of Congressman St. Onge. However, I quickly point out that I endorse them wholeheartedly.

I am very grateful for this opportunity to express briefly my views on estuarine development and preservation. The fact that a national estuarine pollution study has been authorized is testimony to the realization of the economic, biologic, recreational, and scenic value of our estuaries, as well as an awareness of the need for their preservation as a basic element in our complex environmental structure.

The following example will serve to indicate the enormous productive capacity of estuarine regions. Research by a noted authority on ecology, Eugene Odum, reveals that estuaries produce twenty times as much food as the open sea, seven times as much as an alfalfa field, and twice as much as a corn field of the same area. This is all the more remarkable when one considers that this capacity is achieved without the efforts of man and his technology.

The National Estuarine Pollution Study is also a recognition of the fact that unless a vigorous program of preservation is implemented many of those estuaries which have not already been physically altered to accommodate human activities will become the "septic tanks of the megalopolis". One has only to look at the situation facing Chesapeake Bay to realize the enormous task which lies ahead. A single large industrial plant in Baltimore release the equivalent of approximately 400 tons of concentrated sulfuric acid a day into the bay water. In addition, the annual discharge of treated sewage from the City of Washington alone, presently reaches a total of eight million pounds of phosphorous and 25 million pounds of nitrogen. This figure will nearly double by the year 2,000, as effluence from treatment plants increases from 200 million to 360 million gallons a day.

Coming closer to home, the threat facing Long

Island Sound and its estuaries is growing more acute with each passing year. This region contains the estuarine elements necessary to preserve, as well as evidence of, most of the mismanaged human conduct which so seriously threatens continued estuary existence. The shore areas of Long Island Sound have long provided a source of food for valuable commercial and game fish, a significant reservoir for the absorption of flood water, a breeding ground for numerous species of wildlife, a recreation area for a multitude of leisure activities, as well as being a region of unique scenic beauty.

The tidal waters of the Sound, because of their proximity to metropolitan centers and shipping lanes, have been heavily exposed to man's destructive activity. Pollution has come from sewage and industrial wastes poured into rivers and streams which enter the Sound, as well as from commercial shipping and the growing number of pleasure craft. Perhaps the greatest danger is that resulting from bulkheading, dredging, filling, and the construction of dams and causeways. The alteration ~~of~~ to estuarine life from these activities is for the most part irreversible, and removes for all time the ability of the estuary to perform its vital role in maintaining the ecological balance. I hope that as a result of this study a satisfactory means may be found to reconcile the ever-expanding projects designed to increase waterfront real estate with the need to preserve the remaining estuarine space.

I am optimistic that the technological and scientific skills of our nation are equal to this challenge if we are willing to provide the mobilization and organization of the necessary resources, the continuing and expanded research into all aspects of the problem, and the educational programs to inform our citizens of the need for estuarine preservation. An encouraging example of what the technology of private industry has been able to achieve on its own initiative may be seen in the recent development of a process for flushing ballast from oil tankers that practically eliminates pollution of the surrounding seas. This has provided a significant breakthrough in ending a major source of ocean contamination and the related harm to inshore waters and estuaries.

It is obvious that the problem of estuarine preservation and development is but one facet of the over-all, interrelated, and increasingly complex threat to our environment. It will do little good to concentrate efforts only upon the confines of a single estuarine area, if the same area is the victim of continuous befouling from polluted rivers flowing into or around the estuary.

I therefore urge this present study to seek the development of an estuarine conservation system which will include all of the relevant factors affecting both the on-going natural forces contributing to the maintenance of estuary life, as well as a coordinated means of bringing under manageable control the man-created excesses now threatening the viability of our estuaries. Each element in such a system would contribute to its own analysis and methodology which would be harmonized to create a coherent program for present and future application. Inherent in such a system would be the provision for continuing research and evaluation so that the system would contain a built-in flexibility to allow it to respond to changing future conditions.

I am confident of the ability of those responsible for this study to achieve a plan for our estuaries which will accommodate the pressures created by a growing and dynamic society with the need for estuarine conservation. We have at this moment the opportunity to create what could well be the prototype for a whole array of future programs to conserve our environment and the related and all-important balance of nature. I feel certain this opportunity will be fully exploited and I therefore pledge my support as a member of Congress, and I add my support as a member of the General Assembly, to the implementation of the aims and recommendations of this study.

On behalf of Congressman St. Onge and myself, we thank you for the opportunity to be heard.

CHAIRMAN KLASHMAN: Thank you very much.

Captain De Camp?

MR. De CAMP: I feel like clapping for him.

Thank you for your confidence comments because this is exactly what this study will try to do, to propose a system which will solve the problems or at least bring these problems to the attention of all legislatures at all levels so that we can commence making a system such as you desire.

SENATOR PICKETT: Thank you.

Incidentally, I would like to add one brief personal note, that I would like to publicly commend Mr. Curry and the Water Resources Commission of the State of Connecticut.

I have, from personal knowledge, known of their work. I am also aware of the fact that, the same as any

???

other state agency, they could use more money for more personnel and more information but I do want to point out to those visitors from out of state that we in Connecticut are quite proud of this organization.

CHAIRMAN KLASHMAN: Are there any other questions? Thank you very much.

I would now like to call on Dr. Cooch who is representing the Mayor of Milford, Connecticut.

DR. JOSEPH W. COOCH: / Chairman, Ladies, & Gentlemen: The City of Milford ~~has~~ is happy to be represented here & we have great very ~~serious~~ interest in the problem of pollution ~~of the~~ & the loss of use of the estuarian areas in our city. Long Island Sound, its estuaries and the rivers flowing into it through the City of Milford. Much use is made of these waters as recreation areas by citizens of Milford and the many people who use the City as a resort area during the summer. There are approximately 10 miles of direct shoreline and the inlets add about 4 more miles of shore. In addition, there are approximately seven and one-half miles of shoreline along the left bank of the Housatonic River within the City of Milford.

Pollution of these waters, of course, has been, in the past, shared by the City itself and by the adjoining municipalities and some pollution reaches the Sound from boats and ships as well as from Long Island. The City has recognized the importance of preserving these waters by the construction of a series of waste water treatment plants and has increased the percentage of homes in the City which are sewered, particularly along the coast line so that the very minimum of pollution may reach the Sound. These plants offer full treatment, including chlorination of the effluent, and the total solids and B.O.D. of the effluent are at least as good as the waters into which they are discharged. Part of the efforts of the Housing Code Administration activities of the Health Department are devoted to unearthing improperly performing private septic tanks and cesspools as well as houses in the older parts of town which have been found to discharge their sewage into open ditches. Now in the final planning stages is an incinerator, which will replace the city dump which now has potentialities for pollution.

Furthermore, the City has undergone a cooperative effort with the State of Connecticut and the United States Government to perform urban renewal in those parts of town which justify it. These are all along the shoreline. One large area has been completely demolished and is now being rebuilt; another is in the process of property acquisition; the third, which will not require complete destruction and rebuilding, is in the planning stage. Part of the redevelopment will include thorough rebuilding of the sewer lines so that no effluent from these areas can reach the Sound.

The City also conducts a program of surveillance of the industrial wastes of the various manufacturing companies within the municipality to assure that no toxic substances reach either the Sound directly or through the waste water treatment plants. There have been problems in the past but these are being gradually overcome.

Finally, the City has undertaken this summer a program of cleaning up the debris which has accumulated in the small rivers running through the town and out to Milford Harbor so that the water will not only be clean but somewhat more sightly.

We urge that the programs such as these be made standard by all of the municipalities along the various rivers of Connecticut so that the Sound may be clean enough to support not only the recreational requirements but shell fish and other marine life which will be of economic importance.

As Senator Gunther said, at one time these areas supported a large shell fish industry which no longer exists and most of our areas for clamming are off limits most of the time.

We also are concerned for this as a recreational area and for the immediate health of our citizens as well as the many people who come to Milford in the summertime to use these areas. Recently, in travelling from one end of the beach area to the other, I noted cars from 25 different states. So this is a very popular resort area.

The maintenance of an effective area for resort use is most important to us economically as well. Part of the growth of the city depends not only on the people who come there simply for recreation but on industries which move to Milford because of the recreational areas which it affords.

So that this is of very great importance to us and we have been doing as best we can in recent years a good deal about it.

Now, we lagged behind a long time thinking that Long Island Sound could absorb all of the pollution we could produce but we have now, I think, learned a better way. We are now in the process of constructing our fourth sewerage treatment plant.

We have plans well along the way to start, within the next six months, an incinerator which will let us close our most unsanitary city dump which in turn does pollute the water supply and will free up a great deal of land which the state now owns to make a large seaside park.

In other respects we are cooperating or having the cooperation of the federal and state governments doing a large area of urban rehabilitation in parts of the town which were producing a great deal of sewage which polluted the Sound. and As a by-product of this we are installing much better sewers and we are learning how to keep the tidal waters from diluting our sewage and so overloading our sewage treatment plant.

We have worked very carefully with industry to try to help them in reducing their problems of industrial pollution and have given them ways in which they can use lagoons to treat their waste water before it is discharged either into surface waters or into the septic sewer system.

Of course, one of the bad ~~effects~~ features of the estuarine area is the fact that it produces a great deal of mosquitos and deer flies. We have spent a great deal of effort in trying to learn better ways of controlling these without damaging the tidal lands. We have almost given up on the use of poison control. Our entomologist, who works for the city, has developed a means of flooding marshes for a period of one month during the early summer, which drowns the deer fly larva and has helped us a great deal this past summer. We propose to increase the areas we flood a great deal the areas we flood next year. We are working with the City of West Haven to flood a marsh ~~marshes~~ at that end of town as well as the marshes that flow into the Nell's Island complex along at the mouth of the Hosatonic.

We do believe that we cannot do all this ourselves. There are cities upstream and across Long Island Sound which are adding their pollution. So this becomes a problem for the State of Connecticut and for interstate compacts ~~action~~ as well as the federal government. We think a great deal more money is needed to help both ourselves and the other cities which contribute to pollution.

We do feel also there is a great need for research in ways in which we can do these things better, put out a better effluent, even better than our current complete sewage treatment now provides. So we would encourage a great deal of increase in funds of federal and state money as well as an increase in the research at all levels of government ~~by various groups~~ that are supported at various universities that are competent to do it.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much, Dr. Cooch.

are there Any questions? from the panel.

MR. NEWMAN: Could you hazard a guess as to what percentage of the Milford shoreline is zoned industrially?

DR. COOCH: Actually, very little of the shoreline. Most of the industrial -- well, the shoreline along the Housatonic River is largely industrial. Something like 60 per cent of the shoreline along the coast is mostly residential. The rest of the industrial area follows the railroad and U.S. One going through town any where from a quarter of a mile to a mile and a half away from the Sound.

MR. NEWMAN: In total percentage, in terms of the total shoreline frontage of the town, what per cent would you guess is industrialized, just a rough guess?

DR. COOCH: Oh, I wouldn't think more than 20 per cent.

MR. NEWMAN: Thank you.

CHAIRMAN KLASHMAN: Are there any other questions? from the panel?

DR. COOCH: But that is a guess.

CHAIRMAN KLASHMAN: If not, thank you very much.

I should now like to ask are there any other elected officials or representatives of elected officials here? If not, I should like now to call on Mrs. Taber de Forest of the League of Women Voters of Connecticut.

One word about how the names are arranged on the list, I mean the order in which I am calling them. They are arranged in the order in which you contacted our office. Mrs. de Forest was in touch with us on the 23rd of July, 1968. After that, they are in the order in which you registered this morning.

We are going to keep going until one o'clock. We will break for lunch until two. We have made arrangements for lunch here at the Travelers Insurance Company. They have been very kind to open their cafeteria to us. I will give you more directions about that later.

If for any reason somebody has some urgent need to speak in the morning, and if you will let the secretary know, if there aren't too many I will try to work you in. If there are, there is nothing I can do about it except go according to the list as developed, as I explained.

Thank you.

MRS. TABER de FOREST: Members of the League of Women Voters of Connecticut are concerned about the continuing destruction of Connecticut's coastal wetlands and the difficulties surrounding preservation of this valuable and unrenewable resource. Perhaps the most important value of salt marshes lies in their unique function as a breeding ground and nursery for shell fish and fin fish. They also play an important role in preserving the ecological balance on which the survival of many other forms of wild life depends.

The present level of water pollution prevents harvesting of shell fish in almost all of Connecticut's coastal and estuarine waters. Dredging and filling operations for such things as housing and commercial development, marinas and road building threaten many more acres. The danger of thermal pollution from nuclear power plants is growing rapidly.

League members in the Connecticut River Basin -- from all four states, New Hampshire, Vermont, Massachusetts and Connecticut -- agree that appropriate methods of pollution abatement should be employed throughout the Basin to insure water suitable for swimming and water-contact sports and to provide an excellent habitat for fish and wildlife and that marshlands in the estuary region should be protected as an economic investment in fish and shellfish production and for recreation.

We realize that it is difficult to prove that the destruction of any one marsh will seriously deplete this valuable resource, so the loss of marshes which are not in state ownership and whose owners are not conservation oriented continues, one at a time. The cumulative effect is serious and no one seems to know how to stop it.

The dollar value of any acre of salt marsh is frequently quoted at a very high figure which is based upon an estimate of the value of the annual crop of fish and shell fish which is presumably produced by this acre. It is not always made clear that this is a public value ~~which~~ and does not affect its private value. Misuse of this inflated dollar value can have a detrimental effect on programs of purchase by public agencies and private groups interested in preservation of marshes.

In order to complement the program of state acquisition of marshes we would like to see Connecticut enact a law to protect valuable salt marshes by regulating dredging and filling in coastal areas -- a law similar to laws recently passed in Massachusetts and Rhode Island. The amount of authority the Connecticut Water Resources Commission presently has in this regard does not seem to be very clear. Permits are required for dredging or for the extension of structures or fill beyond the mean high water mark and damage to fish and wildlife must be considered, but apparently a permit cannot be denied for this reason alone. The Water Resources Commission is constantly being petitioned to deny permits by those interested in conservation and is in an uncomfortable position which seems to be quite similar to that of the Corps of Army Engineers, who are directed to consult the Department of the Interior about the effects of dredging projects on fish and wildlife, but apparently can only deny permits for navigational reasons. A court decision in March 1968 1963 seems to have nullified the so-called "Memorandum of Understanding" between the Corps and the Department of the Interior, as well as amendments to the Fish and Wilflife Coordination Act of 1958.

We would like to see a strong proposal, such as originally contained in H.R. 25 made into law, as this might effectively put an end to unjustified estuary damage. This provided that "no person may conduct any dredging, filling or excavation work within any estuary of the United States ..... unless a permit for such work is issued by the Secretary of the Interior."

There is a growing need for coastal areas which can be used for public recreation -- swimming, boating, fishing. These activities will require additional parking areas, boat launching sites and marinas which may destroy valuable marsh land in estuaries and coastal regions unless a long-term program for preservation of the most valuable areas is adopted immediately. We need these facilities, but wise long-range planning would not locate them in the middle of irreplaceable natural resource areas. We think that the federal, state and local governments should share in the development of a plan and in its financing and execution.

Reduction of water pollution is essential for preserving the future values of our estuaries. Adequate funding of the federal share of sewage treatment plants is necessary if Connecticut's program of construction is to proceed on schedule. Pre-financing of the federal share is an important part of our state program, and while we realize that some cutbacks will have to be made in federal financing because of our commitments in Vietnam, we hope that this particular provision will not be sacrificed.

We also hope that the Congress will appropriate adequate funds for continuation of this important study of estuaries -- particularly the technical aspects of pollution control and water quality enhancement in the complicated estuarine environment.

Thank you.

CHAIRMAN KLASHMAN: Thank you.

Are there any questions? Mr. Newman?

Thank you very much.

MRS. de FOREST: I do have some slides I would like to show if I have not gone over my time. If it will take too much time I will give them to you.

CHAIRMAN KLASHMAN: Are they 35 millimeter?

MRS. de FOREST: They are 35 millimeter. If there is no one here to show them, why, I will just --

CHAIRMAN KLASHMAN: Are you going to be here the rest of the day?

MRS. de FOREST: Yes, I will.

CHAIRMAN KLASHMAN: We will see if we can work them in later.

MRS. de FOREST: That will be fine. Thank you.

CHAIRMAN KLASHMAN: We will find out about the 35 millimeter projector and you can do that later, if you wish.

Thank you very much.

I would now like to call on Mrs. Gay Ewing, President of the Connecticut Association of Conservation Commissions, Inc.

While Mrs. Ewing is coming up I would like to very quickly read a telegram that was received from Robert F. Kunz, executive vice-president, Connecticut Conservation Association.

"The general problem and even most of the specific problem of estuarine pollution in New England and in Connecticut I am sure is well known to you. I am confident also that the values of marshlands and of estuaries are equally well known to you and your committee. I will therefore not pursue at length these matter here but hasten to assure you that the future of Connecticut's tidal marshlands and estuaries are a major concern of our Association and I am sure of all Connecticut conservationists. To emphasize this point I have enclosed in separate cover publication of the association dealing with several specific Connecticut problems as well as general approaches to the overall problem. Please be assured of our eagerness to cooperate and assist in all ways possible any program designed to protect from pollution and destruction the tidal marshes and estuaries of the State of Connecticut.

Robert F. Kunz Executive Vice Pres. Connecticut Conservation Association."

MRS. GAY EWING: The Connecticut Association of Conservation Commissions, Inc., an organization comprised of town conservation commissions established in accordance with state statute, is deeply concerned with the problem of the estuary system in Connecticut.

In answer to your questionaire we would like to submit the following:

1. The aesthetic values of the estuary system cannot be measured in dollars and cents alone. Rather the value of this system should be measured by the contribution to the health and welfare of all citizens and to the preservation of bird, fish, fowl, and wildlife.

2. The personal and recreational value of these areas is priceless inestimable. The recreational dollar can be made to stretch a long way by wise multiple use of the estuary systems.

3. Scientific studies of how these areas have been damaged by water pollution and sedimentation are not complete. We are in no position at this time to estimate the damage or to give a scientific analysis of the damage.

4. The best use of Connecticut's estuaries is a

use which is compatible with the ecological capabilities of the estuarine system.

5. The system of management for these areas should be a combination of private, town, state, and federal efforts within a comprehensive plan. The plan should be determined after a scientific, economic, and aesthetic study has been made.

Thank you.

MR. NEWMAN: Mrs. Ewing, do you have any idea of how many acres of estuarine area are under custody of local conservation commissions?

MRS. EWING: I think it is probably very little at this time. There are some areas which belong to private groups. I really don't know just how much the conservation commissions have. It is supposed to be town property.

MR. NEWMAN: Do these conservation commissions have active acquisition programs of one sort or another?

MRS. EWING: They have an active acquisition program which is really the town's program. In other words, they are working for the town.

MR. NEWMAN: Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

I should now like to call on Mr. Philip Barske of the Wildlife Management Institute.

MR. PHILIP BARSKE: Mr. Klashman and members: my name is Philip Barske. I am the field representative of Wildlife Management Institute of Washington and a resident of Connecticut.

I have this simple prepared statement which I have presented to the Commission but I do wish to hit just a few issues, more or less off the cuff, of implications on this entire estuarine program. I have prepared my statement which I have submitted at the desk. I do wish to state some of the implications of the problems arising in estuarine areas, not following the questions that you have established. I realize they will be spoken to and about several times.

About a week ago here in Hartford we had a hearing in regard to an estuarine development and future. There are many things involved, pros and cons, but to me the basic issue involved is the pressure that is building up for these areas.

This particular one happened to be a dredging and eventually a gravel mining operation. I merely want to point that out as one of the real issues that ~~is~~ are arising, the competition for these important areas.

We have heard of many of the values, and we will hear of them, but here I know, on a national basis, and I will take the sand and gravel industry alone, they have pointed and projected at the future, that the future need of sand and gravel is a very real issue coming and facing us. This runs into the billions of cubic yards of sand and gravel. ~~There~~ Their own executive director pointed to the fact that the major cities of the east, the estuaries, the mouths of these rivers offer the most productive, lucrative and cheapest source of sand and gravel.

Be that as it may, it is a resource, but if it is handled unwisely, without other knowledge of the impact, we are going to have a severe destructive force in the sense of the pollution of the estuary or a destruction of it.

Again, in ~~the~~ this same category, aside from my prepared statement~~;~~s again the implication of public interest, I refer to the numbers of representatives of labor, Chambers of Commerce, town officials, that immediately jump to the conclusion that this ~~is~~ was a good thing for the town, let's dredge this river, take the resource and the rest of the ecological ~~impact~~ compact be damned. To me, it is a frightening

T 2

aspect, in this day and age, realizing the importance of the issue, the need of retaining of this important resource, and the reaction is, "Let's take it for the moment for what it is worth."

It is just a frightening issue to sit at that hearing and hear labor officials, town officials and others speak of "Let's take this and the consequences be damned."

Now, the basic ecology involved in a normal river system should be concerned and considered in any of these issues. But to me that was the ~~the~~ most important + frightening issue on the horizon is the fact that many, many resources of these river systems are up for grabs.

Now, I have prepared the following statement, which I will summarize, to follow the guidelines requested by the Water Pollution Control Administration. And Again, I merely want to emphasize and reemphasize the destructive forces that are looking toward these coastal and estuarine resources, not only the historically known issues of pollution and siltation and sedimentation.

And Following your suggested outline, may I briefly mention the general values of an estuary and related area.

Number one, the highest value. The major estuarine areas ~~of~~ in the northeast con and have served man early in this country's settlement and our future generations have the right to inherit these productive areas in as healthy a condition as we can preserve and restore them. See insert in notebook.

~~Two,~~ now pollution and its impact. This problem has ~~been~~ + will be fully documented by state and federal ~~agencies~~ officials ~~but~~ and I will merely repeat the words of a truck driver that I ~~once~~ had the pleasure to interview~~ed~~ ~~for a radio program about~~ along the Housatonic River. He parked at one of the lovely overlooks and I went I went over to ~~the truck driver~~ him with a recorder and said, "What do you think of this river?" He said, and the words were simple and direct, "It stinks."

If we know the Housatonic, we know the Quinnipiac, we know ~~of the~~ any of the other states, and I am speaking for Rhode Island ~~and~~ the others. I think that typifies it, foul, ugly, dirty, and still ~~struggling~~ they struggle for their existence. See notebook

I have, as have many others, witnessed the degradation of segments of the most productive waters that our nation possesses. We have taken the bounties these resource units offered and, in turn, have heaped the abuses of an ignorant civilization until these estuaries and coastal waters are now so foul and ugly that they struggle for their continued existence.

What should be productive food areas and the best of recreational, esthetic and wildlife areas, now lay ravaged and gasping.

Three, future of the coastal zones - what should they be? The future of our estuarine and coastal zones should, very simply, be showcases of our ability to manage resources. Clean water, the healthy growth of shellfish and wildlife and as much of the natural border and upland environment ~~in tact,~~ as possible should be retained in tact. Industry, commerce and the attendant and growing needs of a progressive civilization could be worked into this concept, not on top of it!

Question Four, the best uses ~~for~~ of our coastal and estuarine areas. In our modern and fast moving world, it may be difficult to define what is the "best" ~~use"~~ for any one resource. However, in the fragile zone of our coastal resources, I come to a quick and definite decision ~~I~~ of the best use ~~for~~ of the the resource and this is in the public interest -- to preserve, maintain and manage wisely.

An Additional demand~~s~~ of civilization should not be allowed to continuously be the Colossus astride the goals of conservation intent. A deciding point must soon be equated where the fallacious and illusory "right of the individual" ~~and~~ to the resource ~~be~~ is damned to the rest of the public's interest, ~~not be allowed to continue~~.

Five, system of management. The system of management for our coastal areas, and particularly the estuarine units, should be in the public ~~trust.~~ interest.

Again, I project a series of estuarine refuges comparable to the fish and wildlife service refuges established so successfully in the past 50 years. For too long the question of ownership or control has gone as a pendulum ~~from~~ one way to the other, but basically the question of ownership or control has gone too much to the exploiter.

For too long, the questions of ownership or control has vacillated -- no control, private initiative and now a wavering approach to state control This lack of firm management, known authority or direct responsibility has brought ~~us~~ our harvest of nettles and tares and semi-plundered coastal resources.

Too many government bodies, local, state and otherwise have abridged their rights and obligations ~~and~~ to others, more daring and profit minded have taken advantage of the "don't know" ~~and~~ "don't ~~interfere~~" government. care" and "we're not sure" attitude of local, state + Federal

If we are to save our prime coastal areas, government must take a firm stand: and at every level of government deny no person his rights, but act in the public interest with a firm and authoritative program. What we save soon, will soon be all that we will have. As John K. Galbraith stated in 1967, I quote -- "It is thru the state that society must assert the superior claims of aesthetic and economic goals and particularly our environment."

Respectively submitted, Philip Barske.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any questions from the panel?

If not, thank you very much.

I should like now to call on Representative Myrtle P. Gutmann.

REPRESENTATIVE MYRTLE P. GUTMANN: Thank you, gentlemen.

I am very happy that you called on me at this time because I would like to subscribe wholeheartedly to what Mr. Barske has just said. I am a member of the Water Resources and Flood Control Committee of the General Assembly and have been since 1961.

I am here merely to tell you this that all too often at our committee hearings we have many, many people coming to us seeking what they call the abatement of pollution. and What they are calling pollution is what nature has done for our country over ~~the~~ thousands of years. and I have seen instances where the so-called "~~pollution~~ abatement" has been eliminated at a cost that is inestimable to the future of our country's waterways, and

I think that this is something we have got to look into and study and ~~pass~~ have much stronger laws concerning, ~~it.~~ and have ~~It has~~ to start, as you say, locally, most importantly statewide in our legislature and, again, most importantly with the United States Government.

I will submit in writing, I have not been able to do it as yet, but I will submit in writing several instances that I am fully aware of where it was called elimination of pollution but it was~~not~~n't that at all. It was an outright destruction of our wetlands.

Thank you very much, gentlemen, for having me at this time.

CHAIRMAN KLASHMAN: Thank you. There is a message here for Mr. Frederick Cook if he wants to pick it up.

I would now like to call on Mr. Taras A. Halibey.

Do I understand your statement is only a couple of minutes?

MR. TARAS A. HALIBEY: Yes, sir.

CHAIRMAN KLASHMAN: Please come up. We are taking you out of order.

MR. HALIBEY: I appreciate it. We do have another meeting to go to in a few minutes.

The Planning Commission of the City of Norwalk has prepared a report on Norwalk water~~s~~front. It was a very comprehensive study, and We spent as much money ~~as we could afford~~ as other moderate could stand, ? The findings of the study, while dealing quite a bit with the City of Norwalk, waterfront only, has come up with a recommendation which I would like to mention here briefly.

The consultant who prepared the study recommended that a further investigation be made on a regional scale. The City of Norwalk is in no position to go into a major conservation project, ~~except~~ on a very small limited basis. We do not have the resources, we do not have the facilities to preserve marshes.

He says here, dealing with conservation, "It is necessary to relate the value of ~~the~~ Norwalk waterfront to the ~~aqua~~ecological system of the Long Island Sound." He recommends that a comprehensive study be made dealing not only with economics and land use as such, but going to specialized facets which ~~could~~ can not be done on a local scale ~~with~~ using our own forces, such as hydrology, physical and chemical oceanography, marine biology, marine transportation, estuarine and marine pollution, fisheries and wildlife economics and recreation economics. Because of the broad scope and high expense this study must be accomplished by state or federal ~~governments~~ level.

Therefore, this is an appeal from our local level to state and federal governments to devote as much attention as they can ~~and~~ to help us ~~as quickly as possible~~ to preserve ~~that~~ which is very rapidly vanishing ~~from~~ in our town, as quickly as possible.

CHAIRMAN KLASHMAN: Thank you very much.

MR. HALIBEY: Thank you.

CHAIRMAN KLASHMAN: Are there any questions?

MR. NEWMAN: Could I ask you a question I asked of the previous testifier? What percentage of ~~the~~ Norwalk waterfront total shoreline is zoned industrial at the present time?

MR. HALIBEY: Fortunately I heard your previous question so I had a chance to look it up.

We have about, I would think, about three or four per cent of the Norwalk waterfront zoned for industry. In addition to anticipating your question, which you may have had, the acreage, it is mentioned in the report here which our consultant, ~~by the name of~~ who is here by the way Mr. Goldstein, considers suitable for preservation in terms of nutrient, the estuaries, the marshlands, excellent acreage is about 80 per cent, these are our town limits, a good acreage is 175 acres, fair 275 and some which is marginal, about 120 acres, making it a total of close to 1,000 acres which could be considered for conservation of marshlands, which is pretty close to about eight or nine per cent of the total land area of the city.

MR. NEWMAN: Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any other questions? Mr. Cowherd?

MR. GEORGE COWHERD: Sir, does the City of Norwalk have a land acquisition program planned?

MR. HALIBEY: We do have a very active plan. Unfortunately, the pressures are such, there is great need for acquiring park lands and land which can be used for schools, open spaces, which can be used around the central dense peripheral part of the city for recreation, ~~so that~~ The lands which are strictly used for conservation, that is, for example, marshlands or lands which ~~cannot~~ could not be developed for any immediate use for playgrounds or athletic facilities, regrettably is on a very low priority list.

MR. COWHERD: Just one other question. Do you feel that there should be additional funds made available from some other level of government to help you in this program?

MR. HALIBEY: We would like very much to be in a position to get funds from the state or federal governments, at least much more than we could do locally because, as it is now, it is completely hopeless for the city, as such, to acquire land for which there is no immediate use to the citizens of the city. On a long term basis I can only see either the state or federal government stepping in and helping us with acquiring marshes.

CHAIRMAN KLASHMAN: Thank you very much.

MR. HALIBEY: Thank you.

I would like to leave a copy of the study.

CHAIRMAN KLASHMAN: Mr. Hague, would you take this copy? Thank you very much.

I should like now to call on Mr. Ellsworth $. J. Grant, ~~President of the~~ Connecticut River Watershed Council.

MR. ELLSWORTH S. GRANT: Mr. ~~Chairman~~ Klashman, I am Ellsworth S. Grant, President of the Connecticut River Watershed Council. Undoubtedly some of my remarks are going to be repetitive of what has been said before but I am going to try to keep it down well within the time limit and paraphrase my complete statement.

I am also going to talk, obviously, mostly about the Connecticut River which, as many people do ~~not~~ n't realize, is unique in being one of the major river systems in ~~this~~ the country which does not have a major metropolis ~~situated~~ at its estuary at the mouth of the river. Colonization along the river began 52 miles upriver in 1627 when the Dutch established a trading post at what is now Hartford. In 1633 the Pilgrims of Plymouth established a similar post north of Hartford in Windsor. Saybrook and Wethersfield were founded within this period. As the upstream communities developed, this section of the river between Hartford and Middletown represented an inland seaport with shipbuilding, trading, and agriculture as the predominant industries.

Today, the lower portion of the Conn. river is still relatively undeveloped -- some 340 years after the trading post that was set up by the Dutch at Hartford, not far from where we are sitting today, The resident population of the four lower valley towns -- Essex, Lyme, Old Lyme, and Old Saybrook -- which encompasses some 91 square miles -- is approximately 19,000 persons (less than ~~just~~ Wethersfield, or Windsor, in the greater Hartford area amounts to ~~is~~ today). However, it is reasonable to assume that the recreationist, the tourist ~~and~~ the summer home owner like myself combine ~~to~~ the swell of the population of these communities by more than 50 per cent during the months between May and

October.

Development in the estuary area has historically been controlled by such natural barriers as rivers, waterbodies, wetlands, and other areas of difficult topography. However, with the new technologies at our disposal which is supposedly designed to create progress and with growing demands for more recreational facilities (~~especially water-oriented~~), these once unsurmountable natural barriers are succumbing to the interests of the developer and even the recreationist himself. Unless, regulatory measures are developed and enforced now to appropriately direct such interests, these natural areas will be totally destroyed and thereby lost to those people who were attracted to this part of New England because of their very existence.

see p.8'

Now The Council realizes that, at this meeting we are ~~is called~~ to hear statements pertaining to pollution and recommendations for its control in our estuaries. I'm sure, however, that you understand that pollution which may be attributed to municipal, industrial and boating causes is only one aspect of the serious problems ~~which~~ prevailing within our estuarine regions. To overlook all the others causes would miss the opportunity to show the total effects of man upon the estuarine resources ~~throughout the nation~~, and to propose the means to guide man in best utilizing, while ~~also~~ protecting, these resources.

In Connecticut, we have witnessed the loss of 11,700 acres of valuable coastal marshlands since 1914. Today, there remain~~s~~ approximately only 14,800 acres. Someone asked what kind of a value we might put on this ~~it~~. If you use the figure of, say, $5,000 an acre, you can see it would cost some $75,000,000,~~000~~ to acquire this acreage if we were ~~we~~ to do so.

We have seen the slow demise of our shellfish industry in the same period ~~of time~~, which can be related directly to the loss of the marshlands and to pollution. The oyster industry alone has dwindled from the level of producing an annual harvest amounting to $40 million in the early part of the century ~~1900's~~ to one of barely $3 million now. While the shad and alewi~~v~~fe runs in the Connecticut River are still sizeable and produce ~~provide~~ a modest income to fishermen, of course we ~~the river~~ no longer have the ~~has its~~ once plentiful run of Atlantic Salmon. ~~Insert - see book~~

The Council ~~We~~ believes that the state's present pollution abatement programs which have been filed with the Department of Interior will lead to attaining and maintaining high water quality standards within New England's river basins and coast lines. Still needed obviously are the funds and manpower necessary to accomplish ~~the~~ these objectives. ~~of these programs.~~ Once provided and sustained, these funds will allow for the correction of municipal and industrial pollution. What remains is the development of programs for controlling pollution caused by pleasure boats, tankers, freighters, and other heavy tonnage vessels, and especially regulations for controlling pollution at marinas, ports and shipyards where such vessels congregate.

At this point I would like to interject a comment. Dr. Gunther was rather critical, I thought, of the progress being made by the Clean Water Program. As a vice-chairman of the Clean Water Task Force I would like to ask Mr. Curry at some point to state whether the Clean Water Program is on schedule or to deny the remarks that Dr. Gunther made because to my knowledge it is on schedule. and We have the funds at hand to carry it out before the end of the year 1974. Insert - see pad

Thus, although pollution in our estuarine regions is critical, we are already I think ~~tackling~~ handling this problem pretty well through our current studies and programs. We don't really need another study on pollution in my humble, however, opinion. The study that is being proposed should embody all the information that is presently at hand pertaining to pollution ~~of our estuarine areas~~, but it should also concentrate on such matters as the dredging of marshlands, the filling of wetlands, ~~and~~ the mining of gravel and sand which underlie the ~~marshlands~~, m as has been pointed out and is well in Long Island Sound, and the river channels. Now this is a very critical point and maybe this is the heart of the matter here.

The ~~Commercial~~ commercial exploitation of the sand and gravel reserves ~~beneath~~ between our coastal salt marshes, in Long Island Sound, ~~in our shoal waters, and in our river channels~~ and elsewhere has already reached critical proportions. We have a vivid illustration of this type of destructi~~veness~~on in the history of Sherwood Island Marsh along the coast west of the Housatonic River. Today, commercial interests ~~are~~ propos~~ing~~e a five mile long, up to 500 feet wide, gravel excavation upstream from the Housatonic River estuary. This operation, unlike the Sherwood Island Marsh, may not, I emphasize the doubt, MAY NOT, directly affect adjacent wetlands if properly controlled. Yet, as this operation ~~will~~ would create a deep channel five miles long ~~up the Housatonic River~~, the private, or public, demand for building marinas off of it ~~the channel~~ and into the wetlands will undoubtedly follow swiftly, and it would be so simple to expand the dredging operation into these wetlands to create the marinas while also mining whatever gravel deposits that underlie them.

Now I use these two examples to illustrate the dilemma that we face in the absence of effective ~~and enforceable~~ laws which would provide for the protection of our ~~coastal and~~ estuarine resources, and also because these examples are not uncommon in relation to what is occurring in the Connecticut River, and other areas along the coastline.

The health and preservation of the estuary area of the Connecticut River is contingent not only upon how ~~the~~ that area is locally managed and safeguarded but also upon the proper management of the lands and waters throughout the entire ~~Connecticut~~ River basin. Pollutants, sediments, flood waters, ~~and~~ lack of water flow, which are contributed by or attributed to upstream causes, affect the prosperity of ~~the estuarine~~ this region. It is therefore not only the shoreline communities which have a responsibility for safeguarding ~~the health of their estuarine~~ these resources but the responsibility also of inland communities. ~~as well.~~

In recognition of the distinct values of tidal marshlands in maintaining the land-sea balance of wild life, our sister states of Rhode Island, Massachusetts and Maine have enacted legislation ~~which~~ protect~~s~~ing their coastal marshlands ~~and~~ which in effect prohibits dredging and filling, and restricts the use of these areas for the benefit of public health, marine fisheries, wild life, and other conservation purposes. Enactment of laws which would provide protection to Connecticut's estuarine and coastal resources should be undertaken ~~immediately~~ at once.

~~While r~~Recognizing the important contribution the federal government can provide in technical and educational assistance ~~for preserving estuarine and coastal resources,~~ for this purpose, the Connecticut River Watershed Council recommends that the ownership and the management of these resources remain the responsibility of Connecticut's state resource agencies and, where appropriate, national and local conservation organizations.

While in depth studies of The Ecological role of the estuary; Petroleum handling and transport; management of thermal waste waters; which may become very critical in future years; marine and boat pollution; and others mentioned as part of the federal study are important and should be undertaken, we can surmise right now that the conclusions drawn in each ~~one~~ case will be that "we do have problems; these problems are deleterious; immediate action must be taken to correct them and prevent their recurrence." Meanwhile, the resources of our estuaries and coastlines are being destroyed more + more. Those responsible for their destruction will accelerate their plans and operations knowing that within two, three or five years strict regulations may be passed which will severely curtail their presently enjoyed freedom to ~~practically~~ do as they wish.

In summary, as important as ~~the~~ pollution is in ~~of~~ our estuarine regions ~~is~~ the hazards of dredging, draining, and filling are equally important. We have sufficient information at hand pertaining to these resources; we recognize their significance in maintaining the land-sea balance of wild life and marine life. What must be done now, in our opinion, is to enact effective and enforceable state laws for protecting our estuaries and to accelerate state programs for ~~their~~ acquisition. The loss or despoliation of our remaining coastal and estuarine resources will surely make all such studies purely academic.

Thank you very much.

CHAIRMAN KLASHMAN: Thank you.

Are there any questions?

MR. NEWMAN: Your ~~statement~~ estimate of $75,000,000,~~000~~ ~~for acquisition~~ was interesting to me, for acquisition.

MR. GRANT: I picked it right out of the air.

MR. NEWMAN: Well that is as good as any and at least it gives us an order of magnitude.

As vice-chairman of the Clean Water Task Force do you think an acquisition program of that magnitude might be successful in the State of Connecticut in terms of gaining support for ~~an~~ the expenditure of this type of money for wetlands?

MR. GRANT: I don't think it would be feasible in Connecticut now with a $100,000,000,~~000~~ deficit in our state budget, but I certainly do think that we have ~~got~~ to step up our acquisition program. I think the amount of money set aside for this purpose now is woefully inadequate.

MR. NEWMAN: ~~Thank you~~.

So that you would recommend or suggest, in terms of state programs, that it needs to be bolstered in terms of acquisition of funds.

MR. GRANT: Yes, I do.

MR. NEWMAN: Thank you.

CHAIRMAN KLASHMAN: Mr. De Camp?

MR. De CAMP: We talk a lot about acquisition which is a very expensive way. I wonder how much consideration is being given to protection by law?

I fully understand that the problem of zoning, which is a means of protection by law, is a local affair and it is granted to local communities generally by state constitution and legislative action. However, because this authority does come down from the state, do you feel that some protection of these estuaries by law could be established as well as acquisition in certain cases?

MR. GRANT: Well, I certainly think it would help a great deal. I also think we might take a leaf out of the book right now in the establishment of the channelling encroachment lines that we have on the upper Connecticut River within the State of Connecticut which is going to protect the flood plain zones from encroachment by commercial or other interests. The extension of those laws downstream may not be as feasible but something like that, I think, could well be done.

Also I think we overlook the private interests in this field. There are a number of organizations and individuals concerned with this problem who are taking steps to acquire such land now in the lower river valley and setting them aside in perpetuity as open space. I would hope that this movement would accelerate.

MR. De CAMP: Thank you.

CHAIRMAN KLASHMAN: Are there any other questions? If not, thank you very much.

I would like to call now on Mrs. Peter T. Wotton, Barlow C. Wotton, as President of the Aspetuck Land Trust, Inc.

MRS. PETER T. WOTTON: As President of the Aspetuck Land Trust, Inc., organized in 1966 to preserve the natural areas of Easton, Fairfield, Weston and Westport, I would like to speak to the importance of thinking of our estuarine areas as being part of one ecological unit, the Long Island Sound.

In this last year, the Land Trust has been inventorying the remaining tidal salt marshes along the estuaries in our two coastal towns of Fairfield and Westport. And this actual case study has clearly demonstrated that the time is past due when the development and protection of these and other estuarine areas along the whole Long Island Sound can be left to the ups and downs of local decisions, and decisions in three different state capitals.

For instance, in just two of the localities bordering the Long Island Sound, Westport and Fairfield, local and state decisions in the past 10 years have meant considerable destruction of valuable estuarine resources -- the Sherwood Island marshes at the time of the construction of the Thruway, marshes in Gray's Creek and at the mouth of the Saugatuck River for the Town of Westport's sanitary landfill, state decisions allowing dredging and fill operation in the Great Marsh on the western boundary of Westport, now virtually disappeared to become a residential development, called Saugatuck Shores, and in Fairfield, huge areas of the Pine Creek salt marsh being used by the Town for its sanitary landfill.

So speaking to one of your questions on what system of management -- local, state and federal -- should best provide for the development and protection of ~~our~~ these ~~estuarine~~ resources, the time has come for a Commission modeled on the one set up in the San Francisco Bay area to be responsible for the conservation and development ~~in~~ of Long Island Sound. This will of course mean forming a Commission with representation from the three states involved, Rhode Island, Connecticut and New York.

It was my good fortune in my trip to California two weeks ago to attend one of the all day public hearings the San Francisco Bay Conservation and Development Commission was having on their proposed plan and then next day spend an hour discussing the plans and policies of the Commission with Joseph Bodovitz, their executive director.

The original charge of the legislature in 1965 in Calif. was for the Commission to make a detailed study of the

Bay and use this study to prepare "A comprehensive and enforceable enforceable," and Mr. Bodovitz emphasized the "enforceable," "~~Plan~~ For the conservation and development, these two linked together are very important of its shoreline and the water of the San Francisco Bay." Very early in its history the Commission made up of 27 members representing all kinds of interests, from the commercial right down to conservation, in the Bay agreed on a moratorium ~~on~~ of all filling in the Bay and what filling there is will be according to the Plan. As the Commission feels that the Bay is ~~the~~ a single most valuable natural asset of the entire region, an intelligent application of both conservation and development through the proposed plan was a plan for action in achieving the proper use of each.

Now The experience of the BCDC as its called out there and the guidelines found in its comprehensive reports, which I have brought back with you, See pad, should make ~~setting~~ up a similar Commission for the Long Island Sound not impossible despite the difficulties of getting similar legislation passed in three state legislatures.

The BCDC form of government is the only sensible way of looking at the Long Island Sound as a whole. Let's end the piecemeal decisions up and down the Sound.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

MR. NEWMAN: Mrs. Wotton, would you recommend, we have been talking about the need for a plan for the estuaries and the lack of information that we have at the present time. Would you be in favor of placing a moratorium on any large scale fills in Long Island Sound until there is a plan of development?

MRS. WOTTON: I certainly would. As I was just reviewing, while I was listening to the testimony this morning, of course, I think what has made this Commission so successful in San Francisco is that it was set up with a time limit. It was given three years to come in with a plan, a workable plan. It is coming up in 1969 with a report back to the governor and to the legislature.

At that time they will propose, as they are, either of two forms, either a regional government set up for this Bay area or a form of government that will actually take the place of making the decisions that are now done locally in each planning and zoning agency in Connecticut. I don't know how the decisions are ~~actually~~ completely made in New York. But they got the moratorium declared by the legislature on all filling until this deadline is reached. Then, through their studies, they have worked out a very feasible way of ~~this~~ these permit systems.

At the same hearing I also heard the Commission go over one of the permits that is now coming in to them for a filling for an industrial park and saving ~~the~~ marsh~~es~~. It was interesting. It has to have thirteen members voting for it. It was a very close vote, twelve to seven. ~~Even though~~ And the staff had even recommended that this permit be granted, it was voted down by the loss of one vote.

But it is protecting the Bay area. As I have studied the situation, when you are out there you realize that this whole area of Long Island Sound is very similar in its implications of both ~~the~~ commercial development and conservation.

MR. NEWMAN: Thank you.

CHAIRMAN KLASHMAN: Are there any other questions?

If not, I would like to give Mr. Curry an opportunity to answer a question that was raised by Senator Gunther and Mr. Grant.

MR. JOHN CURRY: I don't think that ~~that is~~ as the director of ~~directed at~~ the Water Resources Commission ~~which is~~ charged with the Clean Water Program in the state, I ~~don't~~ want to get into an argument as to whether or not the Program is on schedule. I think if I make the same facts available to you that are available to Senator Gunther or anybody else who may speak here later, you can make up your own minds.

The Program is basically that we have now denoted some 700 odd polluters in the State of Connecticut and have issued orders to them to carry out the abatement of their pollution in some 2,000 steps. Every month some of these steps are accomplished.

The law of the legislature very wisely said that after these orders were issued they could be amended for proper reason. Also, they can go to the courts for court action if the polluter does not like the part of our order that he is ordered to accomplish or the time he is afforded to accomplish it in.

Of these two thousand steps which we want to accomplish before the end of 1971, about 400 have already been accomplished. If we took the actual steps as required and the dates in the original orders as issued, it would probably require that there be 480 or some odd number of steps. So we may be said to be behind in the original concept of the order; we may be said to be on schedule in the actual final orders as they are amended.

Now, the reasons for the amendments are numerous. A man's wife died, he could not do the job, he had to go to the funeral. Another man had a tank, precasted concrete, ~~tank~~ ready to put in the ground on the date ordered ~~but~~ and the contractor dropped it and broke it and a new one had to be cast. These are all realistic things. If you count these as being behind schedule, then we are partially behind schedule.

We don't think so. We think our schedule will have accomplished all of these by 1971. The present indication is that they will be.

Now, the numbers that I have just given you I would not want to certify because I don't like to play the numbers game. As an engineer I try not to remember numbers. I would rather look them up and have them accurate.

These numbers are counted up every month ~~at~~ in a Commission meeting and ~~audited by~~ reported to the Commission, similar to the one that I will have to go to in a short while. The total for the year of operation under our Program is accumulated. This we attempt to publish in the paper every month. It is plotted on graphs on boards in our office. We invite anybody to come in and look at it and to ~~reach~~ make their own opinion as to how far we are ahead or behind.

We are very glad to have the opportunity to say it. I can be as prejudiced as anybody else I realize, I don't want to get into any arguments, but I think the facts are apparent.

CHAIRMAN KLASHMAN: Thank you very much.

I should like now to call on Mr. Samuel Allen, executive director of the Milford Chamber of Commerce.

While he is coming up I will make a brief observation.

The Federal Water Pollution Control Act calls for the establishment of standards by July 1, 1967. And the way this worked Each of the states was to submit this to the Secretary for his approval or acceptance.

The standards consist of three parts, criteria, which ties in with water uses, a plan of implementation. By which we mean something ~~to~~ showing when people are going to do certain things and a plan of enforcement.

When we up here in this region were first talking about this plan of implementation we spelled out that we wanted dates. ~~our~~ YOUR own Jack Curry came up with a proposal. Every time I tell him that, I compliment him on it. He says, "Heck, all I did was just make up a table. I don't know what is so remarkable about it."

But what he did was to make up a table naming each of the polluters, both municipal and industrial, and then setting a specific time schedule when each step had to be taken. In other words, when did the preliminary plan have to be in, when did the financing have to come in, when did the final plans and specifications have to come in, when did the job have to actually start, the construction job, and when did it have to be finished. Each one of these dates is very carefully spelled out by the Connecticut Water Resources Commission.

Mr. Curry's simple table, as he talks about it, really was the one that was used by most of the other states in this region and actually was used as a guide all over the country. Those that have used it are happy about it now, that they went into this detail. Those who have not, have problems ahead of them to catch up with Mr. Curry.

You are very lucky to have him.

Mr. Allen?

MR. SAMUEL ALLEN: Thank you, Mr. Chairman.

My name is Samuel Allen. I am executive director of the Milford Chamber of Commerce. The board of directors of the Chamber has authorized the following statement:

Of all Connecticut towns and cities bordering on Long Island Sound, Milford -- has the greatest amount of shoreline frontage -- 14 miles. This frontage provides boating and swimming facilities for numerous people who vacation in the city every summer as well as for our own citizens. It is a tremendous recreational and economic asset. Perhaps the best evidence that can be offered in support of this statement is the fact that State funds totaling $4 million have been set aside for a magnificent State park along a portion of the waterfront.

The Department of Health of the City of Milford, represented today by Dr. Kouch, reports that effluent and waste from the nearby Bridgeport and New Haven harbors as well as from across the Sound pose a continuing problem to our city. Furthermore, we have been told that pollution in that portion of the Housatonic River lying within our boundaries is the result of improper and inadequate controls from communities to the North.

The Wepawaug and Indian Rivers in Milford are polluted as a result of inadequate control of sewage in other nearby communities. and In the past Milford citizens have contributed to this particular situation.

We do not profess to be experts on the subject of water pollution; however we must register our deep concern over this matter.

There have been two incidents of late where Milford industrial firms have been responsible for pollution. One of the problems has been corrected and the other is in the process of correction. The city works very closely with local industry to assist them ~~with~~ in their problems in this regard.

In addition to the aforementioned economic importance of pollution abatement as it relates to recreation and health in Milford, we are concerned with making our community an attractive location for industry without destroying the aesthetic values of our water frontage.

Pollution abatement is vital to the health and welfare not only of Milford but ~~of~~ to the entire area.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any questions?

I should now like to call on Mr. ~~Erard A. Matthiessen appearing on behalf of~~ Matt Benjamin, Save the Wetlands ~~Committee,~~ Inc. I'm sorry. Please excuse it, Mrs. Matthiessen. Mr. Matthiessen, I was reading your name & the one right below it that I had pencilled in. I'm sorry.

MR. ERARD A. MATTHIESSEN: Mr. Chairman, my name is Erard A. Matthiessen and I ~~reside~~ live at 811 Riverbank

Road, in Stamford, Connecticut. I am speaking in behalf of the Save the Wetlands Committee, Inc., a private, membership corporation of the State of Connecticut, formed by citizens who are alarmed at what is happening to the coastal and inland wetlands of the State, and particularly the estuaries.

I am also a past director of The Nature Conservancy, and have been for many years an officer or director of the National Audubon Society. At present I am Chairman of the Society's Committee on Natural Areas.

It ~~may~~ might also be pertinent to note that I am the President of the Ocean Pond Corporation, which is engaged in propagating and selling seed oysters raised in clear and unpolluted waters at Fishers Island, New York.* We sell some seventy-five million young oysters per year under contract, and ninety-eight per cent of them to Connecticut oyster growers. from N.Y. back to Conn. IT IS NECESSARY FOR THESE GROWERS TO BUY THIS PRODUCT ~~FROM~~ OUT OF STATE BECAUSE IT IS NO LONGER POSSIBLE FOR THEM TO FIND CONDITIONS ALONG THE CONNECTICUT SHORE WHERE NATURAL PROPAGATION IN SUFFICIENT QUANTITY CAN TAKE PLACE. Unless present trends are arrested, there is a very real possibility that within a few years there will be NO NATURAL SHELLFISH GROWTH WHATEVER ALONG THE

CONNECTICUT SHORES

What is happening to the estuaries of Connecticut, the extent of the damage to them by pollution, dredging, filling and other adverse influences will be presented by others. Likewise the great loss in marine resources will be estimated. The Save the Wetlands Committee is very much concerned with this and is concentrating its efforts upon finding ways of doing something to correct the situation as it is.

As the Committee began its own study two years ago, it became apparent that one important facet is the definition of local authority. Townships that have desired to protect the public interest in wetlands have found themselves in a welter of conflicting legal opinions as to what may be done to protect the public interest. There is an obvious lack of delegated authority from the state to deal with these problems realistically. Following the colonial period, wetlands came to be regarded as wastelands. The only public right was in navigation and access thereto. In these respects laws were clearly defined and the public welfare therein was established beyond question. The natural resource values, which have only recently been recognized, are not given the same consideration. Private interest, or land rights have been allowed to overshadow resource rights. Much needs to be done to clarify and bolster the power and authority of the town governments to curtain activities which jeopardize these resources.

On the State level, Connecticut seems to be torn between conflicting viewpoints on the protection of the marshes. Massachusetts, Maine, Rhode Island and New Hampshire have all adopted laws for regulating the use of wetlands by their owners. In the 1966-67 legislative session, a bill of similar nature was proposed for Connecticut. It met with administrative opposition. Finally, as an alternative to regulation, a limited measure giving some funds and authority to the Department of Agriculture and Natural Resources for State acquisition of wetlands, was enacted. Obviously, to acquire all that is necessary for preservation of the marine ecology would be very costly indeed. Furthermore, state ownership is not necessarily the complete answer. Since the State is subject to many public pressures, state ownership cannot always insure the continued preservation of wetlands in their natural state. The principle of private ownership subject to reasonable regulation of usage seems to be the most promising method of preserving these ~~their~~ ecological value? This is what our neighboring states are trying to accomplish.

If from this hearing, there should come a new determination to take a hard look at the needs for legislation to clarify local authority and empower the state agencies to function effectively in safeguarding the estuarine resources against pollution and their physical destruction, this day would stand out as an historic occasion.

In almost every phase of American life, resources have been recognized as of national concern, and where the state or local authority has been inadequate or indifferent, the federal governmant has moved in. Navigation is an early and classic example of federal authority. Our national forests are a more recent and still a dramatic illustration of this principle. If we turn to commerce and industry there are federal regulations in almost every aspect of our daily lives. We do not always like it, but the necessity is generally recognized. In the application of this principle to the protection of estuarine resources, we must recognize that they too are a great ~~national~~ natural resource. The national interest in coastal wetlands requires that the federal government exercise vigilance to insure that state and local governments have all the assistance necessary to deal with these problems.

The Save the Wetlands Committee wishes to thank and commend the federal and state agencies sponsoring this meeting for the attention being given to the problems of estuarine pollution in Connecticut and for the opportunity to present the views of the Save the Wetlands Committee. The extent to which the people become informed about the facts presented and the viewpoints expressed at this meeting ~~may,~~ we hope, may have a favorable effect upon the future of our vital wetlands.

We thank you.

CHAIRMAN KLASHMAN: thank you very much, Mr. Matthiessen. Are there any questions?

MR. NEWMAN: Mr. Matthiessen, you mentioned that there was an administrative opposition to the proposal in Connecticut to have a state or ~~any~~ a regulation on the land use. Could you be a little bit more specific? What was the objection to having such a bill in the State of Connecticut, do you know?

MR. MATTHIESSEN: I don't know exactly what it was. My impression was that it certainly did not receive wholehearted support.

MR. NEWMAN: Does your group support or are they now in fact supporting or trying to sponsor other legislation which would move along those lines?

MR. MATTHIESSEN: Well, our group believes that this will provide the only sure answer, doing what we hope will be done, yes.

MR. NEWMAN: Thank you.

CHAIRMAN KLASHMAN: Thank you very much, ~~Mr.~~ Sir, ~~Matthiessen.~~

I should like now to call on Mrs. Benjamin Nangle, ~~Chairman of the Woodbridge~~ Conservation Commission, Town of Woodbridge.

MRS. BENJAMIN NANGLE: Mr. ~~Chairman~~ Klashman and members of the administration: I am Mrs. Benjamin Nangle of Woodbridge, Connecticut, Chairman of the Woodbridge Conservation Commission and vice President of the Connecticut Association~~s~~ of Conservation Commissions. I should like to speak on possible systems of controlling estuarine pollution. I do this not as an expert but as an inquiring citizen who would like to set forth goals in the expectation that experts will consider them and, if advisable, implement them.

It seems obvious that following the FWPCA Estuarine Study the Department of the Interior should set standards for coastal waters following the pattern of those set for rivers. It also seems obvious that the

Department of the Interior should have equal authority with the Corps of Engineers in making decisions on dredging and filling estuaries. Navigation no longer has that much preeminence over natural resources.

In drawing up standards certain pollution practises should be considered. The two obvious sources of pollution are first the rivers with their increment of excrement and industrial waste and, secondly, the traffic on the Sound.

Hopefully the rivers will be cleaned up as the Water Resources Commission enforces their standards and schedules but the rivers with their burdens of municipal waste, only partially treated, are still the worst polluters. ~~One river, the~~ asking Mr. Curry to consider the Noroton River which flows between Stamford and Darien, and is due to be raised from Class C to B but I am hopeful that industrial waste can be eliminated since its outlet is a great wintering ground for Canada geese, mallards and mute swans. Also it seems a wrong use of pure reservoir water to allow it to deteriorate in the course of two or three miles into Class B or class C as it does in Five Mile River flowing from New Canaan Reservoir, West River flowing from Lake Dawson into New Haven Harbor or the notorious Mill River which flows from Lake Whitney into the same harbor.

Traffic on the Sound is another matter. The larger vessels such as barges, coastal and oceanic ships, yachts and naval vessels create intense pollution while they are moored and when underway in the Sound spew ~~spue~~ out waste and refuse which eventually washes up on the beaches. Would it not be possible to attach these ships to city sewer lines where they are docked and to forbid discharge of waste until they reach a specified limit outside the Sound? I understand that last summer Montreal sealed the heads on visiting craft until they left the area. Oil is another problem. Mobil and Esso boast of new recovery methods in their latest tankers. Could a satisfactory development of this idea be specified as essential for an annual registration? Could habitual seepage and "accidental" oil leaks be met with a very heavy fine? A light fine is cheaper than correction and in either case the public suffers and not the offender.

In small boats could the underwater discharge of oil and gas wastes be lessened by insisting on more complete consumption performance~~s~~ in new engines. Chemical toilets are required in New York State but I have heard that the enforcement date has been twice postponed because no practical device has been perfected. When a solution is found should we adopt it? ~~Could~~ Should it be enforced by random inspection with patrol boats as was done with enemy aliens during the Second World War? The boating public claims that they produce far less pollution than the old houses along the shore who use the Sound as private septic tanks. Should not this be stopped?

These practises I have mentioned create pollution but there is yet another area which should be considered and that is the interaction of various types of shore uses. I refer here to the incompatibility of marinas with beaches, shell-fish beds and salt marshes. All of these are of value but if they are scrambled together the value of each is diminished. The increased interest in boating has created a great demand for marinas and boat yards, towns see them as potential revenue and it is very easy for a man to buy cheap marsh land, dredge and fill it and build a marina. Too often this is one man's profit at the public's expense.

Nearby beaches may be ruined by too many marinas. This has happened at Branford Point. Marina sanitary facilities, inadequately as they are used, often have insufficient drainage fields and add their pollution to that discharged from moored boats. Incompletely burned exhaust wastes make their contribution and the beach is no longer a pleasant place to swim.

Shellfish may be even worse off because of marinas. They cannot flourish in oil and gasoline wastes and they do absorb human refuse to the point where they may carry hepatitis and otherwise be unsafe for human consumption.

An unrenewable resource of marshland may have been displaced by the marina. Dredging and filling may have damaged fish and shell fish with sedimentation. The serene beauty of the marsh will have been destroyed only to be replaced by a marine version of another filling station on the Berlin Turnpike. Property values will go down.

Marinas are needed and they must be in a protected spot but this does not mean that they should preempt every estuary. They should be clustered in estuaries which have already been so bad~~i~~ly damaged ecologically that they are unfit for other purposes. They could be 15 or 20 miles apart and still not impose a burden of too much driving time. Branford and Milford are examples of a development of this sort.

There is a parallel here with the problem of the national parks. The surge of the public to visit the forest primeval has resulted in a tentwall to tentwall carpeting at the camp sites which has nearly destroyed the very quality which was hoped for. Plans are being made to group the camps outside the parks.

This concept of clustering or grouping marinas leads to the idea of zoning. Is it not high time that we had some kind of coastal zoning so that the shore areas ~~would~~ receive the highest and best use? Should sand and gravel be dredged for building when it destroys the habitat for ~~fish~~ fin and shellfish? Should the rich chain of life in the marsh be lost forever so that someone can make a quick dollar? Should the thousands who wish to swim be denied the enjoyment of a clean beach?

The idea of Town Zoning is increasingly accepted as the upsurge in property values which follow zoning demonstrates its validity. ~~Would~~ Should ~~it not be wise to~~ we not apply it now to our whole shore line so that we can preserve that quality environment which we value so highly for Connecticut?

I have thought Mrs. Wotton, ~~who~~ has preceded me, ~~has discussed~~ she is using a tri-state approach for the San Francisco Bay conservation and ~~protection.~~ development program. I have thought of only one for Connecticut whereby a Commission would plan a program for the Connecticut shore and have power to veto projects in the interim. A great deal could be lost in the interim.

For this Board of Coastal Zoning I think we should have a member from each of the following state or federal departments or agencies,

Boating Safety Commission

Bureau of Outdoor Recreation

Coast Guard and auxiliaries

Board of Fisheries and Game

Geologic and Natural History Survey Commission

Department of Health

Historical Commission (the redcoats landed here, you know, in this estuary)

Marine Biologist

Park and Forest Commission

Shellfish Commission

Soil and Water Conservation Division and the

Water Resources Commission, last but not least by any means,

And from private organizations the following,

Connecticut Conservation Association

Nature Conservancy

Forest and Park Association

Save the Wetlands Committee and the Society of Landscape Architects.

Each of these has a unique contribution to make but since seventeen is too large a number for a working committee much of the detailed study could be assigned to the five regional planning agencies which border the shore. Some of these such as the South Central Conn, agencies have already done a great deal of work on the coastal areas. However the program itself should be laid out by the above suggested Board which should also have the power of review of that program and could carry zoning infringements before the courts.

I hope that if this idea has any validity you knowledgeable people will discuss it and come to enough agreement so that the Legislative Council can be asked to draw up a bill for the coming General Assembly.

Since writing this, I discussed this with my ~~I sent a copy to~~ Senator Gloria Schaffer. She thought it was a "marvelous" idea and suggested that I send a copy of it to a Mr. Charles ~~Alfonso,~~ ALFANO, who is the chairman of the Legislative Council.

I have done this and I urge you to write to him your better ideas.

Thank you very much.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any questions? Mrs. Nangle would you wait a moment?

MR. De CAMP: Based on many years of experience I would like to answer one question, and that is ~~At the present time it would be impossible to connect~~ in the current warships or naval vessels in use at the present time it would be impossible ~~to shore --~~ not impossible but rather impractical to connect them to shore sewage lines. However, in accordance with the executive order of the President all federal activities, including the Navy and its naval vessels, are going ahead with rapid experimental work to solve this problem. I am sure that new vessels will be built with the proper disposal facilities on them. They must be built in accordance with the law. It is the older vessels that cause the problem.

You made the point that you thought the Department of the Interior should share the authority of the Corps of Engineers in the business ~~instances~~ of dredging.

MRS. NANGLE: Yes.

MR. De CAMP: I think that in the Water Pollution Administration we feel~~s~~ that modification by dredging is a very strong source of pollution but I am trying to wrack~~ing~~ my brain ~~trying~~ to see how you could share this authority?

MRS. NANGLE: It was a gentleman's agreement which fell through because they could only decide on matters of navigation.

MR. De CAMP: Yes, we do have that agreement with the Corps of Engineers that the Corps of Engineers grant permits for dredging and the Department of the Interior does review these permits. But when the Corps of Engineers dredges on their own in major harbors and rivers, the Department of the Interior does not share in this authority.

MRS. NANGLE: Could they?

MR. De CAMP: That is a hard question to answer because we are dealing with federal law. It could be made a federal law but I feel that it would be difficult to administer.

MRS. NANGLE: Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any other questions?

If not, I would like to call on Mr. Walter Boardman, of the Wilderness Society.

MR. WALTER S. BOARDMAN: Mr. Chairman, my name is Walter S. Boardman and I am appearing here before you as a representative of The Wilderness Society, a non-profit conservation organization with 40,000 members including nearly 1,000 in the State of Connecticut.

The Wilderness Society believes that there is already adequate information on hand concerning the importance of pollution free estuaries. While it is true that only recently their significance is becoming understood, it is now well established that they are both an important factor in food production and basic to a wide variety of recreational activities. There is clear evidence to warrant the application of every legal means now available for their protection. It is also a matter of hard statistics that they are being rapidly diminished by sacrifice to other uses and that the productive value of those areas remaining continues to be reduced through pollution.

A review of Connecticut's history in the enforcement of its authority in tidal marsh protection shows less than courageous action than the people have a right to expect. The delay in the handling of the application for a marina ~~at~~ in the mouth of the East River in Guilford is a current example and the failure of the Water Resources Commission to enforce the law on Ash Creek is another illustration of the ~~harsh~~ hard truth about the situation in general.

An examination of the laws enacted by the General Assembly of the State of Connecticut reveals that the Water Resources Commission has the power to stop pollution of wetlands. However, many citizens of the State feel that the Commission is not taking an aggressive or even effective position in line with this authority. In fairness, it should be added that adequate funds to employ personnel for doing the job have not been appropriated.

I would like to extemporaneously comment ~~sincerely compliment Mr. Curry.~~ that I We appreciated very much the ~~his~~ comments of Mr. Curry here today. I think It threw some light on the difficulty of the question, and Perhaps we're ~~were~~ not wholly fair but I believe this is the general feeling.

The failure of the State to parallel or even to follow its New England neighbors in wetland legislation is ~~further~~ evidence of both confusion and avoidance of responsibility in marine source ~~resource~~ management. In 1967, the General Assembly of the State considered a bill to provide adequate means for coastal wetland protection. It had strong, widespread backing by the public. However, a substitute bill was offered and adopted which was much more limited in scope. It gave the power of condemnation and some funds for wetland acquisition to the Department of Agriculture and Natural Resources. It has served to promote a program of land acquisition to secure important waterfowl areas for hunting purposes, but falls far short of meeting the comprehensive protection needed.

It is also noted that the Department of Agriculture and Natural Resources, in an official communication to the Federal Water Pollution Control Administration, suggested financial support for land acquisition would be welcome. Otherwise, the Federal Government should not be concerned with what is done in Connecticut. The Wilderness Society endorses the activities of the State Board of Fisheries and Game, but sees this as only one important phase of estuarine resource protection. It is much too narrow and inadequate for the wide range of the resources endangered.

The estuarine resources must be preserved and if the State agencies are unable or unwilling to do so, then there must be Federal participation to see that it is done.

In conclusion, it is hoped that the many organizations and agencies concerned with the deteriorating environment can work together to reverse the trend that continues to take place. No one level of government can succeed alone in this. There is need for close cooperative effort of the local, state and federal administration backed by citizen support, if we are to win the race against the destruction of natural ~~environment~~ resources.

I wish to thank the Federal Water Pollution Control Administration, and all of the various agencies that have joined in holding this meeting here today, for the opportunity to be heard.

Thank you.

CHAIRMAN KLASHMAN: Thank you, Mr. Boardman.

Are there any questions?

If not, I would like to announce the next three people that I am going to call on who are representing our Rhode Island colleagues. John W. Lebourveau, assistant to the Vice-President, Narragamsett Electric Company, will be the first speaker. Following him will be George E. Lavallee, Conservation Director of the Rhode Island Division of Enforcement, and next will be Henry J. Deion, Jr. President of the Rhode Island Association of Con~~versation~~servation Commissioners.

MR. JOHN W. LEBOURVEAU: Gentlemen, my name is John W. Lebourveau. I am employed by New England Electric System, a major electric and gas utility organization serving 250 communities in the New England area. Today

I am speaking in behalf of the Narragansett Electric Company which serves 75 per cent of the Rhode Island area and is a subsidiary company of New England Electric System.

My position in this organization is to study and advise management in the field of water quality and air quality control. By the establishment of a specialized group for this work, we are able to concentrate our efforts in this rapidly developing field. At the same time the benefits of training and experience which are developed at various locations and projects in the system are made available to assist planning new developments at other locations.

The Narragansett Electric Company has a direct interest in the estuaries of Rhode Island, particularly Narragansett Bay. We appreciate the important influence it has in the total economic vitality and growth of our state. An electric utility can only grow and prosper with in the area it serves. Therefore, any development which promises to improve the utilization of natural resources, to stimulate manufacture and trade, and to improve the quality of our environment deserves our interest and attention.

The people of Rhode Island are already acting to improve their environment. They have supported legislation to control pollution of the air, to protect and preserve tide-flowed marshlands. They have classified the waters of the state, both fresh and salt, and have developed a schedule of remedial measures as required under the Clean Waters Restoration Act of 1966.

In our utility service organization we are assembling information about the various demands related to the use of estuarine waters. The most important finding to date is an appreciation of the complexity of the problem. Let me give a few examples.

We began with a general realization of the need for good water quality to support marine life. Further study reveals that the various species and life stages have separate and distinct requirements in terms of temperature, salinity, dissolved oxygen, and food materials for the wildlife.

We knew that disposal of municipal and industrial wastes depended on the assimilative capacity of our estuaries. We now are impressed by the costly and extensive facilities which will be required to process ever larger volumes of wastes without overtaxing the natural capacity of the estuaries.

Likewise, we have an interest in the recreational needs of Rhode Island people and the visitors which we welcome each year. Much of the recreation is water based, and can only develop if our coastal waters are of suitable quality.

What about the power requirements in Rhode Island? Although the water power of numerous small rivers and streams supplied energy needs of early industry, it was the steam engine which made possible the larger power developments of the 19th century. Providence was known for the manufacture of locomotives and steam engines for factory use. With the advent of electric energy in the late 19th century, generating stations, powered by steam engines, were established at Providence, Pawtucket, Newport, and other cities.

These steam engines, and their successors the steam turbines of today, depend on the Bay Waters in two respects. First, the fuels (both coal and oil) have been brought by ship at lower cost than is possible with shipment by rail. Second, the steam condensing system uses Bay Water to carry away heat which cannot be utilized by the turbines.

Narragansett Bay, therefore, has always been an important location for the generation of electric power. We confidently expect that this use of the waters will continue and increase in the future to meet the demand for power in this region. We recognize that this may require more detailed evaluation of new power sites and careful attention to the details of the water discharges.

Mr. Joe G. Moore, Jr., Commissioner of the Federal Water Pollution Administration, stated just last Thursday night at a Symposium on this very subject "Economic well being is dependent on power generation". He described the effect of ever larger power plants and the efforts which would have to be made to accommodate their cooling requirements.

This brings us to the crux of the problem. In a State like Rhode Island all of these legitimate needs make their own demands on estuarine waters. These demands are insistent -- they must be satisfied. Yet they often conflict with each other. This problem was recognized in the authorization for the National Estuarine Pollution Study. Instead of promoting specific programs or projects, or rushing into the adoption of arbitrary regulations, this Study emphasizes scientific investigations. This work in both ~~the~~ theoretical and applied sciences will identify what is known and what needs we have for new information.

We find three specific fields of study which particularly need continuing research. The first is that of Marine Biology. We need to know the specific varieties of wildlife present in each location and the environmental factors which affect reproductive success and growth. We need to learn what can be done to improve the productivity of estuarine waters.

The second problem area is the treatment and disposal of wastes. The congestion of wastes in relation to the limited amount of water available for assimilation will require improved techniques for reducing the burden on the receiving waters.

The third area is that of basic currents and flows in Narragansett Bay itself. It is necessary to learn how water currents distribute wastes, nutrients, algae, and foods for fish from one part of the bay to another. We need to know how the tides and the mechanism of flushing the Bay by ocean waters operates.

In summary, the Narragansett Electric Company supports the overall objectives of this National

Estuarine Pollution Study. We believe that the comprehensive approach which recognizes the needs of all the important demands on our estuarine waters is essential. Finally, the perspective which begins with the needs of people whether in public health, employment, transportation, recreation, food and agriculture, or electric energy is necessary. Only in this manner can your report, due in 1969, convey to the Congress recommendations which will be sound, fair, and best designed to promote the utilization of this resource.

Thank you.

CHAIRMAN KLASHMAN: Thank you.

Are there any questions?

Mr. De Camp, do you have any questions?

MR. De CAMP: No, I think it was well covered.

CHAIRMAN KLASHMAN: Mr. Newman?

MR. NEWMAN: No.

CHAIRMAN KLASHMAN: I wonder, in your statement, in talking about the use of the Narragansett Bay and other waters of course for cooling, there are alternatives, are there not, for the direct use of cooling water?

MR. LEBOURVEAU: Yes, sir, there are alternatives. The most obvious ones which are being discussed in various parts of the country are the so-called cooling towers, cooling ponds, which is a closed lagoon built just for the purpose of delivering heat to the atmosphere, or simply by providing additional dilution so that the temperature level is reduced.

Each of these has to be evaluated in terms of a particular site and the values which one is trying to protect.

CHAIRMAN KLASHMAN: For example, I understand that the cooling towers are quite expensive. If you were to put in cooling towers for one of your larger installations, exactly how much would this add to the cost of power in mills per kilowatt?

MR. LEBOURVEAU: The only case that I am familiar with, sir, is that at the Vermont Nuclear Power Plant ~~or~~ known as ~~the~~ Vermont Yankee, ~~Plant.~~ The statement has been made that the increase in generating cost would be from a quarter to a half mil per kilowatt hour, which does not sound like very much but if you put it on an annual basis for that particular plant, the combination of the carrying charges and the operating expense will be approximately $1,000,000,~~000~~ per year.

CHAIRMAN KLASHMAN: Do I understand correctly

T 3

if the cost were, say, a quarter of a mill, that is a fortieth of a cent.

MR. LEBOURVEAU: That is, yes, that is right.

CHAIRMAN KLASHMAN: A fortieth of a cent or a twentieth of a cent, if it were half a mill.

MR. LEBOURVEAU: Yes.

CHAIRMAN KLASHMAN: In other words, to a domestic consumer, ~~he~~ I realize~~s~~ that the company has to make a profit on this, but we are talking ~~about a~~ in rather a small sum, are we not? I mean, after all, the price is passed on to the consumer, isn't it?

MR. LEBOURVEAU: There is no question but what the public will have to pay the cost of whatever additional expense is required to take care of this problem. There is no other source of income.

CHAIRMAN KLASHMAN: We are talking about pennies per year.

MR. LEBOURVEAU: It sounds ~~like that,~~ that way, on a per unit basis, sir, but we feel the total dollars are sufficiently significant to require engineering and evaluation from a wildlife point of view on each specific project.

For example, in this case that I am mentioning there is a capital investment of $5 to $6,000,000,~~000.~~ We feel that this kind of investment justifies a specific attention to a site rather than a simple arbitrary rule which would hopefully be applied to all projects without study.

CHAIRMAN KLASHMAN: No, Of course, we recognize ~~the site.~~ this. I just wanted to make sure for the record that we understood ~~what~~ that we are talking about ~~in terms of expense and money.~~ in so far as the consumer is concerned.

MR. LEBOURVEAU: If I may, I would like to point out that these costs of generation seem low but they are only a fraction of the costs of bringing power to the consumer.

CHAIRMAN KLASHMAN: ~~Of course,~~ This of course we realize. Thank you very much.

MR. NEWMAN: Mr. Lebourveau, in terms of environmental studies, before locating plants, nuclear or fossil fuel, ~~other,~~ does the power company, say, before acquiring the site make an environmental evaluation ~~in effect~~ to determine what the environmental effects might be of siting in a particular location?

MR. LEBOURVEAU: More and more the ~~effects of~~ environmental effects are being taken into consideration. In general, this has been done on the basis of experience. In other words, experience on what a plant of this type would do to the water quality.

At the present time utilities in the New England area and elsewhere in the country are taking field programs, we may hear more about this later today in this area, so that we can have quantitative ~~in~~ numbers on which to base our judgment as we move to new sites. We are aware that this matter of obtaining additional information is necessary.

We believe that it is a partnership approach between those who propose to build and those who have the responsibility to regulate. We believe that is a shared responsibility.

MR. NEWMAN: Well, specifically, for instance, I believe there are three in Somerset, Massachusetts, there are either two or three large power installations at the present time.

MR. LEBOURVEAU: Two at the present time, sir.

MR. NEWMAN: I was wondering ~~do~~ if you know what the effects of these plants are now, on, say, Narragansett Bay or the tributaries entering it?

MR. LEBOURVEAU: The power plant the gentleman is referring to in Somerset, Massachusetts, which faces ~~on~~ Mount Hope Bay, which is a tributary of Narragansett, contains two power plants, one owned by the New England

Power Company and the other ~~one~~ owned by the Montauk Electric Company. The first one, the New England Power Co. Plant, is by far the larger, and

We have taken preliminary measurements of the water temperatures and we will no doubt take more because we are adding to our capacity at that station.

MR. NEWMAN: There are plans for a third plant, is that correct?

MR. LEBOURVEAU: It is under construction. By that you mean a third unit at the existing power station. That is the case, this is now under construction. We will start operation early next year.

MR. NEWMAN: Thank you.

CHAIRMAN KLASHMAN: Thank you very much, sir.

I would now like to call on Mr. George E. Lavalee, Conservation Officer~~s~~, ~~of the~~ Rhode Island Division of Enforcement.

MR. JOHN CRONIN: You have the wrong man but that is all right. We registered together.

My name is John Cronin of the Division of Conservation, Department of Natural Resources. I registered with Mr. Lavallee.

We have a brief statement which I have submitted.

Page 128 Not available

I am not going to read it because it is a bit repetitive.

I do want to very briefly state, of course, that we in the Department of Natural Resources and its predecessors and many people in fish and game of course throughout North America have been working with the estuaries for years. We are very, very delighted at long last to get assistance from all these added talents and funds.

As you could probably gather, we haven't ~~not~~ been totally successful in saving the wetlands. That is all I really have to say. We welcome everybody aboard.

Our Department in Rhode Island will be working hand in glove with any agency, state, local or what have you, that wants to help us with our wetlands.

Thank you.

CHAIRMAN KLASHMAN: Sir, would you please identify yourself again.

MR. CRONIN: John Cronin, Division of Conservation.

CHAIRMAN KLASHMAN: Did you say you had submitted a statement?

MR. CRONIN: We have a statement, yes. It has been submitted.

CHAIRMAN KLASHMAN: You have given that to

Mr. Farlow?

MR. CRONIN: Yes, we have.

CHAIRMAN KLASHMAN: Thank you very much.

(The statement submitted by Mr. Cronin follows:)

The Rhode Island Department of Natural Resources has an intense interest in the well being of Rhode Island's estuaries.

Without question, the State of Rhode Island's greatest natural resources are found in the estuarine areas of Narragansett Bay and the various salt ponds. These areas are of tremendous value for various forms of recreation varying from fishing, swimming and boating to bird watching and just plain ocean viewing. They also are the breeding and nursery areas for many of our most important fin and shellfish as well as various kinds of aquatic birds.

It is impossible at this time to put a full dollar value on this resource but, on the basis of estuarine dependent commercial fisheries alone, the estuaries in Rhode Island were worth over $2,7000,000 in 1967.

Upper Narragansett Bay and major rivers of the State of Rhode Island have been and are grossly polluted by both industrial and domestic pollution. The dire results of wanton pollution are readily apparent and greatly lower the value of Rhode Island's estuarine resources. Just one example is shown in the attached map which shows the estuarine waters of Rhode Island that are closed to shellfishing because of pollution. It is estimated that these polluted waters could supply an annual harvest of shellfish valued at a million dollars.

If our estuaries are to be preserved and provide their full recreational and economic potential, two things must be done! Pollution must be stopped and irresponsible filling and dredging operations must be brought to a halt. The newly established water quality standards show promise but are yet to bear fruit. Rhode Island has a law to protect the filling and dredging of salt marsh, but the fine is so low that any sharp developer just considers it another business expense.

The State of Rhode Island has already made a start in preserving estuarine areas, but much remains to be done. There is room for cooperative endeavors for estuarine preservation that involve, local, state and federal agencies and the Rhode Island Department of Natural Resources would be pleased to participate in any such endeavor.

CHAIRMAN KLASHMAN: I should like now to call on Henry J. Deion, President ~~of the~~ Rhode Island Ass'n. of Conservation Commissioners.

MR. HENRY J. DEION: Mr. Chairman, members of the Committee, ladies and gentlemen, good afternoon.

I have finalized some comments but not until late last night. They are in my own graffiti which I am sure even your xerox machine ~~won't~~ wouldn't copy. I will have a copy typed and submitted before your deadline date. I would like it to go into your record.

My appearance here today is as president of the Rhode Island Association of Conservation Commission~~s~~ers, even though I am a member of the Rhode Island Department of Natural Resources.

I am sure there are others more qualified who have and who will speak with expertise on the estuarine oriented resources and amenities which have either been destroyed or are presently threatened by pollution.

Mr. Chairman, my presentation relates to some of the ~~probable~~ problem causes and the future philosophies concerning the methodology and systems management of coastal waters in the future. The following points, although not necessarily in order of sequence of importance, are presented for your consideration.

One. There are several major rivers and their tributaries in Rhode Island which empty into the Upper Narragansett Bay. This association feels that the present stream classification of these rivers is still too poor to be effective or realistic to bring about pollution abatement.

Two. The City of Providence maintains a joint sewer-storm drain~~age~~ complex which is totally inadequate to effectuate proper pollution control. In fact, if, in the future, suburban communities are allowed to tie ~~try~~ into this complex, the problem will be proliferated rather than abated. Future arrangements of this nature should be proscribed. Drain storms ~~Storm drains~~ and inadequate treatment capacity should not be the license to open bypass valves which result in untreated sewerage being introduced into Upper Narragansett Bay.

Three. Sewer treatment plants are still being located on river flood plains with their outfall going into said water courses. This outfall contains ten percent raw sewage when the plants are operating at maximum efficiency. and As the facilities depreciate, their efficiency drops. Witness the cities of Cranston, my own city, and Warwick, with treatment plants on the ~~Pawtucket~~. Pawtuxet River.

Four. Positive action should be applied to restricting flood plain developments of any sort on major water courses, especially when sewerage is not channelled to and through treatment plants.

Five, and this is a redundancy, a repetition of a comment made by several others, especially Mrs. Nangle for one, who I thought presented an excellent paper, zoning of Narragansett Bay into "compatible uses" has now become mandatory. This is not to be construed as "multiple use," which implies all uses are permissible.

Safe and healthy utilization of our coastal waters should be the basic criteria in establishing compatible zoning restrictions. and This includes utilization by industry, and The fellow ~~from the~~ Rhode Island or from Narragansett Electric Company spoke on the need of Narragansett Bay for generating power. I have a total electric house, I find it very convenient. I also find conflict if I have to enjoy this convenience and see pernicious use of our Upper Narragansett Bay. I feel that zoning will make for a compatible utilization of the area.

Six. Narragansett Bay requires a regional and interstate approach.

Seven. Future actions should require a

comprehensive and coordinated master plan of regional state and municipal development within a strong framework toward enhancing the total environment of our citizens and their coastal resources and amenities.

Mr. Chairman and members of the Committee, does it seem a bit incongruous to appropriate federal funds for interstate highways, which entice industrial, business, and residential developments that overtax sewer treatment facilities which empty into water courses that further pollute estuarine areas, expressly Narragansett Bay?

Subsequently we are confronted with public hearings, similar to what we are attending today, to learn what can be done to correct the resultant problems. This type of brinkmanship unfortunately has become the rule rather than the exception. Local jurisdictions could be forced to tax or penalize major polluters by withholding federal funds in a judicious fashion if a comprehensive interrelated master plan were ~~not~~ effectuated.

Where local jurisdictions find the issue too political, encouragement should be made toward the creation of a citizens' group with non-politically affiliated members and/or the creation of an authority.

Eight. Somehow a method should be found of

"Reaching City and State Planning Agencies." It appears that a new breed of planner is in order. This ~~provision~~ profession is the one which recommends and ~~defines~~ designs the orderly or haphazard development of a city or region and its services and facilities, including the eventual location of sewage treatment facilities and their resultant outfall.

Nine. Laws, rules and regulations without teeth and ~~in~~adequate enforcement are as bad ~~as~~ if not worse than ~~there weren't~~ ~~any~~ no laws at all.

Mr. Chairman and members of the Committee, thank you for the opportunity to appear before you. I wish you luck in your efforts to effectuate a viable program of management and protection of our estuarine areas.

CHAIRMAN KLASHMAN: We thank you very much. You have voiced several opinions that have been voiced many times by members of our staff and myself.

Are there any questions?

MR. PELOQUIN: You made a statement to the effect that you felt some of the streams in the Upper Narragansett Bay area were not classified as high as they should be. I don't recall that you identified them, if you did, I missed it.

MR. DEION: I didn't identify the streams. I will take one as a for instance and that is the ~~Pawtucket~~ Pawtuxet River. The Lower ~~Pawtucket~~ Pawtuxet River in two segments has been classified as "D", and ~~We~~ we still feel, and this is a river which borders on my own community, ~~that~~ we still feel that this is the dirtiest river in the State of Rhode Island. and I might also add that where the river starts my family, ~~and~~ my children and I swim in the Pawtu~~cket~~XET River, it is that pure. It comes from the surplus water from the Providence water Supply Board watershed. It is the drinking supply for the City of Providence. But just in a short length of this river ~~goes~~ it has gone from that which is drinkable to the filthiest,

and ~~It~~ it is ironic, sir, that we talk about the pollution abatement in the estuarine areas and talk about plans and zoning and what have you when we do not have a master land plan, a comprehensive plan for our inland areas. This is where the problem starts. This is the cause, ~~this is the beginning.~~ This is an intrastate stream.

MR. PELOQUIN: Are there any interstate streams that you know of or that you feel that are classified ~~"D."~~ too low?

MR. DEION: We have the Blackstone and the Ten Mile River, too. I think Mr. Shea, my colleague from Rhode Island in the State Service, can verify this.

A VOICE: You also have the Pawtucket River, ~~which is intrastate~~.

correct, correct

MR. DEION: ~~That's right,~~ It is not in Connecticut.

CHAIRMAN KLASHMAN: We would like very much to hear from you later, sir, if you want to identify yourself.

On the Blackstone River it is my recollection that there is one small section of the river below Worcester, ~~in Massachusetts~~, which is classified as "D." in Mass., ~~There is~~ none in Rhode Island as I recall, is that right?

But ~~However~~, the City of Worcester is being asked, I mean the State of Massachusetts has indicated that they will make them put in a very high degree of treatment. This is actually, you know, being scheduled right now. Unfortunately, even after they put in this high degree of treatment, without dilution water there is no way of getting it up above the "D" classification, but ~~However~~ the state has gone further and indicated that they will do further research to see whether they can get that up above a "D."

I thought you might be interested in this. This "D" classification was not accepted just willy-nilly.

If you have any others that you wanted to discuss later, we will be very happy to discuss them with you.

MR. DEION: I think Rhode Island had a public hearing on this and ~~that~~ I think the sentiment was expressed there. I don't know where the ~~any~~ compendium of information is ~~on this~~. but perhaps Mr. Shea has it,

CHAIRMAN KLASHMAN: ~~If~~ It is available, and we can get this.

In general, the policy in this region was to not recommend any classification below a "C" unless the state was able to show us that there was no other way that this could be achieved even after they had put in the highest degree of treatment they knew how to do.

If we have missed on any of these we sure would want to go back and look at them again because the Secretary is very much concerned about this very point that you are making.

MR. DEION: Well, my views were expressed at the public hearing and it was documented. I am sure you will have access to it.

CHAIRMAN KLASHMAN: ~~We will~~ Mr. Hague, you will probably ~~have~~ get an opportunity to check the record in the state file.

Thank you very much, sir.

MR. DEION: Thank you.

CHAIRMAN KLASHMAN: I should now like to call on, there are two names, Victor and Judith Muniec. Which one of you wishes to speak?

MR. VICTOR MUNIEC: I will, and I want my wife also to speak briefly at one point.

I am Victor Muniec, president of the Ash Creek Association. I want to give you a little bit of background about Ash Creek, trace a little bit of the history of the organization itself, our immediate problems and what we hope to do in the future.

What we hope to do in the future is not what we want to do but what we are being forced to do.

Ash Creek, as you may or may not know is a substantial body of tidewater that borders, ~~or~~ separates, ~~or~~ divides a good part of Bridgeport from Fairfield. It opens on the Long Island Sound. It has a narrow mouth, broadens into an area of several hundred acres with 15 or 20 acres of marshland~~s~~ ~~and~~ tidewater, grass all along the edges. It narrows again about a mile from the shore where the Boston Post Road crosses and then opens, broadens again north of the Post Road into a fairly substantial lake and then narrows into what is called the Rooster River.

Except that ~~Actually~~, the Rooster River is now just a creek.

It has been filled in with dirt, rubble and everything else. It is just a very narrow passage up above.

We became involved last December. I am ~~an instructor in~~ Director of Public Relations at the University of Bridgeport and I don't really have the time for this but I live on Ash Creek. I have a family, I have four children, my wife is here, we are expecting a fifth in December. We have a nice modest home on this body of water and we are just very upset at what has been going on.

Now, it is nice to say that all this effort is going into maintaining clean water but how about these bits and pieces that ~~a~~ this property owner, ~~buys and a~~ that business, that contractor fill~~s~~ing in gradually and destroy~~s~~ing an area. This is what is happening on Ash Creek.

I think when we speak for Ash Creek we are speaking for a lot of other individuals, a lot of other property owners, a lot of other small organizations throughout the state, throughout the region. We want to tell you a little bit about our effort because it does have wider applications.

Now, my wife's grandfather settled near Ash Creek sixty years ago; he died last summer. When he first came there he was able to pick lobsters and clams right out of the bottom of Ash Creek. This is no longer possible. Last December a contractor, Anthony Julian, of Julian Railroad Construction Company, purchased a piece of land bordering on Ash Creek, part of it in the light industrial zone, a small part, most of it in the residential "B" zone. He began filling illegally, without a permit from the State Water Resources Commission.

At that point we knew very little about which organizations had which responsibilities and ~~or~~ even, in fact, that a State Water Resources Commission with authority existed. We tried to have this filling stopped through the local authorities, and ~~T~~they referred us to the state. A permit had not been applied for. It was applied for and has since been tabled ~~issued~~. But this ~~the~~ same man has been instrumental and his trucks have been filling in other areas along Ash Creek. He in ~~In~~ effect, we believe, ~~he~~ is using others as a front to achieve his ends.

I want to speak about one of these others because it ~~he~~ is ~~the~~ most active. now, this ~~There~~ is ~~The~~ Journey's Inn at 3336 Fairfield Avenue. It is north of us across the Post Road ~~over~~ on this other entrance, ~~side.~~ There is filling taking place on either side of Journey's Inn. The Bullard Company is across the street, over the years the Bullard Company has filled in six, seven or eight acres of land with fly ash from its foundry. This floats downstream. You can see the ridge all along the shore. The marsh grass is dying. It is all this silt that has silted into the lower part of the creek. There is a foot of this down below. It is not all from Bullard but a good part of it is.

They ~~do not~~ don't have a permit from the State Water. Resources Commission. We are told recently they've acquired one ~~inquired for one.~~ and they've asked how.

Well, nothing has really been done. When we are concerned about, is clean water~~,~~ ~~that~~ is fine, but what happens when you destroy all this area? The ~~creek~~ clean water is going to pass through two narrow channels of concrete and what have you got left?

Biologists tell us that 75 per cent of marine life have to breed at one point in their life, breed or come ~~back~~ or return to these estuarine areas. We have heard a great deal ~~of~~ about the aesthetic values. I don't have to dwell on these. But Journey's Inn is exactly that, an inn which fronts on the Boston Post Road. It does a lot of catering and the back end of it borders on Ash Creek.

When this current owner, Mr. Gus Diemus, bought the property on the creek there was a beautiful little park which Mary Journey, the previous owner, had built.

When he began to fill in and we protested, we protested to the State Water Resources Commission back in January when suddenly, in addition to this filling, three automobiles had been dumped overboard into the channel, on March 28th and 29th he filled in, we protested again. The State Water Resources Commission attempted to stop him, the local officials attempted to stop him, he continued filling on the 29th, he again filled on May 10th, and others around this area ~~he~~ have continued to fill in.

Well, we feel that it is all right to have laws, as has been expressed here. If you read the statute in terms of the power of the State Water Resources Commission, the State Water Resources Commission does have the power to ask the attorney-general to enjoin or abate a violator from placing an obstruction into tidal water or navigable water. This is what this is.

Well, what happens when a man continues to do it and nothing is done? We asked the representative of the State Water Resources Commission. This man has filled not only his own property, he has gone 15 or ~~20~~ 25 feet beyond into the channel. What happens with this additional footage that this man has suddenly gained for his own ends? Well, the explanation we got was a shrug of the

shou

shoulders and "We really don't know."

This man could apply to the state for permission to use this land, this additional land that is, in effect, ours, the property of the people of the state, for his own ends provided he maintains it. What does that mean? He puts a wall around it, which means he fills a little further, maintains it. If he wants to sell it, well, then the new owner acquires these rights. But he has destroyed an additional part of this channel.

I think it is time that some of this filling came to a stop. People who know what the law is or are told what the law is and they feel they can go ahead and nothing is going to be done about this.

Once the land is there, it is never going to be taken up again. This is part of the real problem here because the State of Connecticut has never required a man to dig up what he has illegally placed in to tidal waters.

This, I think, is a step that needs to be taken. This is what we are attempting to do. It is part of the state law. We ask, well, will the State Water Resources Commission take action against this man, and the implication, ~~is~~ are for others also, to force him to dig up the land that he has placed there, this fill? and The feeling apparently is that either they don't want to get involved or it is a decision they don't want to make. They may feel they do not have the full legal authority for this.

I understand that I was supposed to receive a letter from the State Water Resources Commission following a June hearing at which time ~~they~~ this cameup telling the Ash Creek Association what action was being planned. Well, I understand, after two calls to the State Water Resources Commission that it has been referred to the state attorney-general. Well, I haven't heard anything. I don't know whether the state attorney-general is planning any action but I think he should. I think this is a responsibility of the state where the law has been broken. If the law is not strong enough then perhaps legislation is needed.

We have been faced with this all along. We are individuals, we have other responsibilities. We don't have a great deal of resourcesat our command. Other organizations have expressed an interest in the effort on Ash Creek. A great deal of moral support has been offered but when you go to court, as we are going to be forced to do, it is going to require money. We don't have this. We have appealed for this and some small contributions have come in but it certainly is far from enough and not really our responsibility except that we live there.

CHAIRMAN KLASHMAN: Mr. Muniec, excuse me for interrupting, the purpose of this meeting is to attempt to get the views of the public on things that the Congress of the United States might do, in this matter of estuaries. I think the things you are talking about are things involving the state.

If you have anything specific to suggest that you think the Congress of the United States should do, we will be very happy to hear that. and I would appreciate getting anything you have to say in a written statement if you wish. We are trying to keep the statements down to about ten minutes. See pad.

MR. MUNIEC: I think One of the points ~~we~~ I do want to make is that these estuarine areas are being destroyed, that it is very frustrating for an organization to become involved in a situation like this where local officials, ~~and~~ state officials are apparently not giving us the protection we feel that we deserve, and Some action has to be taken, either If it isn't done on the state level then perhaps it has to be done on the federal level.

CHAIRMAN KLASHMAN: What you are suggesting then is that there be federal laws that cover this.

MR. MUNIEC: I think it can be done on the state level if there is proper legislation and on the local level if there is a real sincere effort on their part.

CHAIRMAN KLASHMAN: But you mean, as far as the Congress concerned, ~~you are~~ are you recommending that there be federal legislation. Is that what you want us to consider?

MR. MUNIEC: I think guidelines of some sort ought to be established by the federal government, and, if necessary, perhaps there is a need for federal legislation in this area.

CHAIRMAN KLASHMAN: Fine. Do you have anything else to add?

MR. MUNIEC: I do. It may not be exactly in order but I would like my wife to read notes of the March 2~~6~~8th and March 29th meetings which really depict our frustration, our efforts to work through local officials, through state officials, to bring this illegal filling to a halt, if you think it is in order.

CHAIRMAN KLASHMAN: Well, it certainly is. Can you --

MRS. JUDITH MUNIEC: I would rather make a statement than read the entire proceeding.

CHAIRMAN KLASHMAN: Yes, if you can make a very brief statement.

MRS. MUNIEC: I have grown up on the shores of

Ash Creek. I think my children are fortunate that they can grow up near an estuarine area. It is rather remarkable because we live in an industrial city, but here is this area which has managed to survive.

I think one of the most important things we have to think of is that no area is too small. I think this is one of the big frustrations that people run into when they are trying to save any estuary. Very often people say, "But there are so many." But, very often, where there is the smallest piece of marshlands to save it is the most necessary.

This creek is in a city but it serves a broad area. It has a lot of biological value but it is also just there for the people in the city. It is breathing space, it is a place where city children can observe water fowl, they can crab, they can fish, they can boat, and it is a wonderful area.

We found, I think the hardest thing when you perhaps live in a city, you are dealing with the state. You go to so many agencies and really no one is sure that he has the final word on something. The city officials will not take any position and ~~say~~ you, "Go to the state." and Even the state officials say they are not sure where their authority comes. I think something must be done along this whole coastline to determine who has the power, where the mean high water mark is, where the state steps in, where your local community steps in, even where the federal government steps in, if you get into this.

We have dealt with so many agencies, and we are so new to all of this, from the Army Corps of Engineers to the Department of the Interior, to ~~our~~ your local zoning officials, to the State Water Resources Commission, to the Department of Public Works. Everyone has a finger in the pie but no one is ultimately responsible.

One of the things we have found that most often it comes back to is that, well, we don't know where the mean high water mark is, we don't know where we are dealing. We have to establish these things. They must be established and it has to be done quickly. Until then everything we can do is a holding action and at this moment that is what our efforts do amount to.

CHAIRMAN KLASHMAN: Thank you very much, Mrs. Muniec.

Are there any questions?

Thank you again.

If not, I should like to call on Mr. John E Hibbard, secretary of the Connecticut Forest and Park Association.

Mr. Hibbard, do you plan to show some slides?

MR. JOHN E. HIBBARD: Yes, I have four slides.

CHAIRMAN KLASHMAN: I would like to explain something on these slides. This also applies to Mrs. Ewing.

Again, the purpose of this meeting is to obtain the views of the public so that in the report that we submit to the Congress these views will be included.

Do you have copies for us or can we borrow them and make copies?

MR. HIBBARD: I have these copies prepared for you and for the record.

CHAIRMAN KLASHMAN: Fine.

MR. HIBBARD: The information that is on these slides is contained on these various maps throughout the room so that if the public is interested in looking at them, they may do so.

You may have the copies, which are over here on this table with the projector, I believe.

CHAIRMAN KLASHMAN: That is fine.

MR. HIBBARD: They are over here on this table with the projector, I believe.

CHAIRMAN KLASHMAN: Fine, thank you very much.

MR. HIBBARD: My name is John E. Hibbard. I am secretary-forester of the Connecticut Forest and Park

Association. I reside in Hebron, Connecticut.

The Connecticut Forest and Park Association, is a 73 year old non-profit conservation organization and we are pleased to have the opportunity to present~~s~~ this ~~following~~ statement for ~~consideration at the public~~ this hearing ~~meeting concerning the impact of~~ on pollution ~~on~~ of our coastal and estuarine waters. See pad. which is being held at Travelers Indemnity Company, 57 Prospect Street, Hartford, Connecticut, August 19, 1968. The statement was prepared on behalf of the Association ~~was prepared~~ by a Committee appointed by the President as authorized by the Officers and Directors. The committee consists of : Harrol W. Baker, Jr.; Mrs. Woolsey S. Conover; Russell P. Hunter; Willard D. Hartman; Peter Borgemeister; and ~~John E. Hibbard.~~ myself. See pad.

This statement deals with the coastal and estuarine waters within the georgraphical limits of the State of Connecticut and places emphasis on the aesthetic, recreational and wildlife values of these zones.

COASTAL WETLANDS

Connecticut's first survey or inventory of coastal wetlands in 1914 noted some 23,360 acres.[1] This resource dwindled to some 14,839 acres in 1954 and between 1954 and 1964 the loss of 2,179 acres took place.[2] Connecticut has approximately 12,000 acres of tidal marshland located along Long Island Sound, the Connecticut, Housatonic, and Thames Rivers.

While the resource is threatened and affected by pollution from municipal and industrial waste, it is also faced with threatened destruction from filling operations for airports, bridges, channels, docks, housing, industry, marinas, roads, recreation areas, and schools. If the loss of the resource at the rate of about 218 acres per year[1] continues little will remain by 2000 A.D.

We believe that it is appropriate to list the location of the significant coastal wetlands which we have located on the map from information obtained from Mr. Julius Elston, Chief, Mosquito Control Section, State Department of Health on July 23, 1968 and Mr. James S. Bishop, State Board of Fisheries and Game on July 23, 1968. We realize that this information may not be complete, but we are of the opinion that it represents a fair picture of the resource.

1. Connecticut Comprehensive Statewide Outdoor Recreation 1965.-1970.

2. Supplementary Report, June 1965 on the Coastal Wetlands Inventory of Connecticut, U.S. Department of the Interior, Fish and Wildlife Service, Region V, Boston, Mass., 1965.

TOWN	MARSH	ACREAGE	TOWN TOTAL
Stamford	Wescott Cove	22	22
Norwalk	Noroton Point	5	
	Wilson Point	22	
	Nash	30	
	Manrissa	100	
	Norwalk River	8	
	Gregory Point	30	
	Shore Haven	140	
	Norwalk Island	5	340
Westport	Saugatuck Shore	35	
	Saugatuck River	50	
	Sherwood Island	100	
	Green's Farms	10	
	Sasco Creek	25	
	Cockenoe	5	225
Fairfield	Sasco Brook	5	
	Pine Creek	175	
	Fairfield Beach	50	
	Ash Creek	40	270
Stratford	Great Meadows	288	
	(Lordship)		288
Milford	(Unditched)		
	Nells Island		
	Upriver Islands		
	Riparian Marsh		
	Beaver Creek (Ditched)	836	
	Grant Creek	70	
	Gault Pond	110	
	Calf Pen	140	
	Merwin Pond	40	1196
West Haven	Old Field Creek	1	
	West River	42	43
New Haven	Quinnipiac River	310	
	Morris Creek	10	320
Hamden	Quinnipiac	450	450

TOWN	MARSH	ACREAGE	TOWN TOTAL
East Haven	Morris Creek	50	
	South End	90	
	Branford	90	
	East Haven River	295	525
Branford	East Haven River	98	
	Kelsey Island	58	
	Granite Bay	21	
	Killams Point	14	
	Lindsey Cove	8	
	Lower Branford River	107	
	Upper Branford River	125	
	Indian Neck	23	
	Sybil Creek	81	
	Pleasant Point	98	
	Stony Creek West	123	
	Stony Creek East	88	844
Guilford	Leetes Island Quarry	65	
	Island Bay	49	
	Great Harbor	250	
	Sachem Head	41	
	Vineyard Point	52	
	Indian Cove	58	
	West River	277	
	Guilford Point	55	
	East River	213	1060
Madison	Neck River	480	
	Madison Beach	50	
	Webster Point	180	
	Hammonasset River	500	1210
Clinton	Hammonasset River	150	
	Indian River	105	
	Hammock River	330	
	Hammock Point	50	635
Westbrook	Menunketesuck River	190	
	Patchogue River	69	
	Westbrook Beach	5	
	Castle Brook	50	
	Stannard Beach	65	
	Chamman Beach	15	394

TOWN	MARSH	ACREAGE	TOWN TOTAL
Old Saybrook	South Cove	150	
	North Cove	500	
	Ferry Point Marsh	95	745
Old Lyme	Great Island) Black Hall River) Lieutenant River)	540	
	Back River	98	
	Lyme Station	47	
	Smith's Neck	109	
	Griswold Point	27	
	White Sands Beach	5	
	Mile Creek	106	
	Point O' Woods Beach	7	
	Four Mile River	27	
	Calves Island	32	
	Duck River	37	1035
Waterford	Niantic Bay	16	
	Jordan Cove	12	
	Harkness Memorial	20	48
Groton	Baker Cove	40	
	Poquonock River	34	
	Mumford Cove	8	
	Groton Long Point	27	
	Palmer Cove	15	
	Bebee Cove	15	
	Sixpenny Island	45	
	Mystic River and Harbor	45	229
Stonington	Mason Island	50	
	Mystic River	15	
	Mystic Harbor	7	
	Green's Hammock	22	
	Wilcox Cove	13	
	Quambaug Cove	15	
	Lords Point	15	
	Stonington Harbor	12	
	Stony Brook	20	
	Quanaduck Cove	22	
	Velvet Mill	5	
	Elihu Island	19	

TOWN	MARSH	ACREAGE	TOWN TOTAL
Stonington	Airport	22	
	Donahues Brook	15	
	Wequetequock Cove and River	21	
	Barn Island	280	
	Pawcatuck River	30	583
Lyme	Lord Cove	520	
	Seldens Creek	220	740
East Haddam	Chapman Pond	110	110
Essex	Thatchbed Island North Cove	25	25
Deep River	Pratt and Post Coves	90	
	Chester Creek	190	380
		TOTAL	11,717

The value of the coastal wetland resource is significant. It provides a natural habitat for fish and wildlife and a wide spectrum of other forms of plant and animal life. The natural beauty of the resource is another attribute in addition to the recreational value to the sportsman and naturalist. The coastal and estuarine wetlands provide a nutrient trap between the land and sea which is a dynamic environment for a wide variety of fauna and flora. The coastal wetlands also provide an invaluable asset in affording protection from flooding in hurricanes and other natural catastrophes. The value of coastal wetlands as a source of food for shell fish and finfish will be explained later in this presentation.

While the coastal wetlands may benefit from nutrients and minerals contained in the outfall from sewage treatment plants, the process of eutrophication may be increased to a point where the level of these marshlands may be raised to a point where they are actually damaged.

The obvious pollution of all principal harbors in Connecticut from Byram in Fairfield County to Stonington in New London has taken its toll in reducing the value of the coastal wetland resource. The reduction in value of the resource has been outlined by the U.S. Fish and Wildlife Service in their Supplementary Report on the Coastal Wetlands Inventory of Connecticut.[2] The following reference is made to the deterioration of the resource:

"In addition, the quality of many of the remaining marshes declined. Siltation from adjacent fill, deliberate or incidental diking, drainage, and mosquito-control resulted in marsh deterioration due to loss of basic productivity or interference with the tidal interchange of nutrients. Such deterioration may be marked only by slow changes in plant zonation, i.e., almost imperceptible shifts from Spartina alterniflora to S. patens or from the latter species of cordgrass to other plants adapted to dryer conditions. Damages resulting from pollutants were not measured.

"Finally, there was a further reduction in the value of relatively undamaged wetland to wildlife, particularly to waterfowl. It was measurable in decreasing use and was attributable to added disturbance and stress. The basic causes were the intensified use of areas adjoining the marshes by increasing numbers of people and the dwindling sizes of many of the larger marshes."

These facts tend to point out that the future value of present coastal wetlands will probably deteriorate if pollution is not abated and development of areas adjacent to the present resources continues at current rates.

Information on areas zoned for industrial and commercial uses obtained from the Industrial Zoning Atlas 1966, Connecticut Development Commission, in our coastal towns is not encouraging.

An overlay of these areas placed on the map of the current resource points out obvious conflicts.

Unless local attitudes concerning the zoning of these areas as open space change, or they are acquired by local state and private groups, or protected by other legal means, the death knell for the areas that are not presently protected will ring in the not too distant future.

Many of these coastal zones have been used for agriculture, ditches for mosquito control, crossed by railroads and highways, dredged for navigation, and filled for many forms of development and it is expected that they will continue to be modified for various purposes until some agency of government is authorized to effectively control the use of this resource.

The best use of the coastal wetlands that remains would be the preservation of the resource in its natural state.

Onwership has been and is expected to be a vital consideration of management to be developed for an estuarine resource. The fragmented ownership of the coastal wetlands and other coastal and estuarine areas is at present a complicated maze including as owners - individuals, corporations, private conservation groups, towns and units of state governments.

Superimposed on these owners, several state agencies have been charged with a variety of legal responsibilities regarding tidal waters. Included in this list of agencies are the Water Resources Commission, State Board of Fisheries and Game, the Shellfish Commission under the umbrella of the Department of Agriculture and Natural Resources. The State Department of Health, through its Division of Mosquito Control and Environmental Health Services Division, also has an interest in these resources.

Local governments also have a role to play in the future of the resources. The development of adequate open space plans and the adoption of local zoning of these areas as open space could go a long way to assure protection of the resource. To date it has been relatively difficult in many towns to implement these plans because of lack of interest of the citizenry or an intensive degree of effort to attract "industry" by town officials.

Regional Planning Agencies can also help guide the course of action. They can point out alternatives to conflicting land use priorities and can serve as a forum and a sounding board. These key issues are pointed out in Recreation on the Sound, published by the Regional Planning Agency of South Central Connecticut.[3]

"IV. SOME KEY ISSUES

"Public and private investment in the shoreline of the region is substantial today, and considerably more than it was twenty years ago. In most cases of public expenditure, the program of development has been oriented to the economic benefits to be achieved. The dredging of New Haven harbor to deepen the channel was almost solely a matter of economics: the benefits to the taxpayer were evident in the rise in receipts for shipping. But even this does not tell the whole story, for in the process of dredging and depositing the spoils, Long Wharf and the Connecticut Turnpike were made a reality and the beaches at Lighthouse Point and Savin Rock were extended and greatly enhanced.

"Similarly, much of the recent effort in constructing erosion protection devices has enabled towns to create better beaches. to hold the sand more efficiently against tidal action, and in effect to do two jobs for the price of one. The point is that it is possible to have one's cake and eat it too. The basic requirement is a carefully programmed course of action which provides opportunities to develop multi-purpose benefits, with a view not only to economic advantages but to the improvement of the social and the recreational environment as well."

There are also several federal agencies and interstate Federal Compact Commissions with some degree of involvement in the management of our coastal and estuarine resources. The U.S. Army Corps of Engineers, Agencies of the U.S. Department of the Interior, such as the U.S. Fish and Wildlife Service in addition to the Atlantic States Marine Fisheries Commission, New England Interstate Water Pollution Control Commission, and the Interstate Sanitation Commission.

Private organizations such as local land trusts, National Audubon Society, the Nature Conservancy, The Natural Resources Council of Connecticut, the Connecticut River Watershed Council, Save the Wetlands Committee and this Association also have an interest in the proper use and management of this resource.

3. Recreation on the Sound, Regional Planning Agency of South Central Connecticut, 60 Connelly Parkway, Hamden, Conn. 06514, March 1967, Page 22.

A federal agency such as the U.S. Department of the Interior might be given authority sufficient to correlate the divergent interests of all organizations to create a system of management similar to the Cape Cod National Seashore to protect, and restore the value of the resource which has been misused.

An alternative would be the creation of a Commission on Long Island Sound which was alluded to at the Seventeenth Conservation Conference of the Natural Resources Council of Connecticut held in Cheshire on May 20th of this year.

A great deal has been said in favor of a properly funded state acquisition program on a willing sales basis. Since this program was proposed in 1954 there has been a only a limited amount of funding available. The present outlook leaves much to be desired on two accounts: The first is thatprices being asked for these areas are relatively high and the second is that few owners seem willing to sell at the present time. This unwillingness seems to be based on the assumption that property values will increase substantially in the near future.

The rights of private ownership have been held to be almost sacred since the establishment of this nation.

In view of this fact it is questionable whether restrictive legislation would be upheld by the courts in this state. While protective legislation adopted in Massachusetts, Rhode Island and other states is attracting considerable attention at the national level, it has not been met with enthusiasm by public officials in Connecticut for the reasons stated above. It is significant to note, however, that Public Act 536 of 1967 Session of the General Assembly, Section 2, states:

"The Department of Agriculture and Natural Resources shall establish a program for the protection, preservation, acquisition and improvements of the tidal wetlands of the state."

The Act also authorizes the State Board of Fisheries and Game to "take land or any interests therein by right of eminent domain ....."

The above legislation is at least a start and if funds are made available in time, some progress will be made. The Legislative Council of the State of Connecticut is conducting a study on the preservation of wetlands as directed by Proposition 642 of the 1967 Session of the General Assembly. We look forward to learning about the recommendations that the Council will make to the 1969 Session of the General Assembly.

RECREATION

The recreational use of Connecticut's coastal and estuarine waters falls into two broad categories. These are non-contact and contact recreation. They require water to recreate on as in the case of non-contact water orientated recreation; and in water contact recreation, water is required to recreat in. The non-contact forms include boating, fishing in most cases, hunting in most cases, viewing the resource, bird watching, etc. The water quality requirements for this type of recreation are quite different from the contact types. The water can be polluted to some degree, i.e., as long as a boat can navigate, as long as some form of fish or wildlife can sustain itself, and as long as there is some natural beauty remaining to enjoy, recreation in this form remains possible. With the above thoughts in mind it is evident that non-contact recreation is possible on most coastal and estuarine waters of Connecticut. The quality of the recreational resource in this area may, and does in fact, leave a great deal to be desired but in any event rec-

recreation is possible.

The same cannot be said for water contact recreation activities. The water quality requirements are obviously much higher from the standpoint of health and safety and for this reason contact recreation is marginal, at best, in most areas where it is allowed. In many of our coastal and estuarine waters, however, the water quality is so low thatwater contact recreation is prohibited.

The areas that are presently closed to bathing, due to pollution are significant. Information on these areas obtained from the State Department of Health earlier this month is graphically illustrated on the next slide.

Water Quality Standards established by the Water Resources Commission, when met, by abatement of pollution, will allow water contact recreation to take place in many areas where it is now impossible and will improve the quality of the recreational resource for all purposes in most coastal and estuarine areas. The citizens of Connecticut have said yes to a program of control of pollution which includes financial participation by Federal, State and local government and affords tax incentives to industry to get on with the job of pollution abatement. Connecticut has showed its good faith by authorizing a bond issue of some $150,000,000 which will enable the State to advance the Federal portion of the cost of pollution control facilities to municipalities. The municipalities and industry appear to be acting in good faith and progress is being made. The Federal government must keep its end of the bargain and continue to finance the program as was anticipated at the time of its adoption so that this most essential program can continue.

We have learned from the State Department of Health[4] that through their extensive sampling and sanitary surveys on tidal areas in Connecticut secondary treatment and chlorination of sewage discharges would make bathing possible in most areas. They have also indicated that while there are many inlets that are presently suitable for bathing they have not recommended their use because of the possibility of varying tidal and runoff conditions carrying pollution onto the bathing area.

Following the abatement there are numerous natural sandy beaches along the shore that can be developed for recreational use. The Connecticut River has many of these natural beaches in the towns of Haddam, East Haddam, Chester, Deep River, Essex, Old Saybrook, Lyme and Old Lyme. With secondary treatment and chlorination in the Thames River estuary, there will be considerable opportunity for new bathing facilities in Montville and Ledyard and in the New London and Groton area the threat of pollution to existing beaches will be eliminated. The Housatonic River Estuary is quite built up so that additional areas for bathing are limited. Pollution abatement would, however, improve the recreational quality of beaches in the towns of Stratford and Milford in addition to restoration of a valuable area for the spawning of shellfish.

The abatement of pollution will add millions to the dollar value of Connecticut's recreational resource. It will enhance the value of the facilities that have been built by state and local government and will further justify the investments recommended in the Statewide Outdoor Recreation Plan.[5] We need to continue our commitment in this area and the present concepts for Federal, State and local cooperation in the area of pollution control seem to be operative.

---

[4] Theodore C.Willerford,Principal Sanitary Engineer, Environmental Health Services Division, State Department of Health, Hartford, letter, July 25, 1968.

[5] From David C. Wiggin, State Department of Health, August 2, 1968.

FISHERIES RESOURCE

Estuaries and marshes have historically provided a good environment for the spawning and development of young oysters. These areas have served as barriers to predators found in deeper water and provide a salinity and nutrient environment that is especially favorable. The Shellfish industry has historically been orientated to the production of seed oysters. The ninety-two percent decline in the production of seed oysters, from three million bushels in 1900 to 250,000 bushels in 1966, indicates that the resource as known at the turn of the century has been destroyed. The revenue loss from the 1910 production, stated to have a worth of $40,000,000 in 1966 dollars to the 1966 production with a value of $3,000,000, is a loss of $37,000,000. This is a figure of considerable magnitude. Part of this dramatic decline may be related to naturally occurring cyclical variations in the spawning intensities of oysters, but there is no doubt that pollution of our coastal waters and the destruction of coastal wetlands have been important contributing causes. In the New Haven area the productive oyster beds that occurred formerly in the lower reaches of the Quinnipiac River marshlands and the inner part of

New Haven Harbor have disappeared completely in recent years as a result of sludge accumulation which creates a soft bottom unsuitable for oyster attachment and leads to a high content of particulate matter which can inhibit the rate of feeding and hence the growth rate of the organisms. There is evidence that these very areas are the most important spawning regions for the local oysters in view of the current systems in the harbor that carry the larvae over the setting beds. Many oyster larvae produced in offshore waters are probably lost to the industry by being carried to deeper waters.

The coastal wetlands serve as spawning and nursery grounds for finfishes as well, the blackback flounder, an important commercial species, being a well-studied example. Further, our wetlands are the home of a number of species of small fishes, such as the killifish, which provide food for the larger fish species caught by commercial fishermen and sportsmen alike.

Pollution of coastal waters has been a significant cause of this loss.

The destruction of coastal wetlands has also contributed significantly to the decline of the resource. The reduction of this habitat for shellfish and as a spawning area for some 60 species of finfish has been felt by commercial fishermen and sportsmen alike.

Most of the area that produce shellfish have been closed for taking or harvesting of shellfish by the State Health Department[5] due to pollution. These are graphically displayed on the next slide and are listed in this statement for the record.

---

[5] From David C. Wiggin, State Department of Health, August 2, 1968.

LIST OF RESTRICTED SHELLFISH AREAS IN CONNECTICUT WHERE CLOSURE LINES HAVE BEEN DEFINITELY ESTABLISHED BY THE STATE DEPARTMENT OF HEALTH

1. GREENWICH That area enclosed by a straight line from Neck Point in a southwesterly direction through the west extremity of Great Captain Island to the Connecticut-New York state boundary line, thence by a line in a general north-westerly direction along the state boundary line to the mainland at Byram Point.
2. DARIEN-STAMFORD That area enclosed by a straight line from Greenwich Point extending in a northeasterly direction to Stamford Light, thence by a straight line extending in a southeasterly direction to the bell buoy immediately south of "The Cows", thence by a

straight line extending in a northeasterly direction to the number 1 flashing buoy located southeast of the east breakwater light on Shippan Point, thence by a straight line extending in a northeasterly direction to the southern extremity of Long Neck Point.

3. DARIEN-NORWALK Five Mile River. The tidal waters and flats of the Five Miler River north from the southerly extremity of Butler Island extending easterly to the southern extremity of Roton Point.

4. NORWALK (1) That area inside the Norwalk Islands enclosed by a straight line extending from a point on the mainland known as The Knob (located about 1600 feet northeast of the outer tip of Wilson Point and designated on the U.S. Coast and Geodetic Survey Chart) to the Northeasterly extremity of Little Tavern Island, thence by a straight line to the northerly extremity of Ram Island, thence by a straight line to the northwesterly extremity of Chimons Island, thence by a straight line to the westerly extremity of Grassy or Hay Island, thence by a straight line to the westerly extremity of Sprite Island, and thence by a line due North to the mainland, provided that permits may be granted for the taking of market shellfish from the

Norwalk town beds in this area during such periods as the water temperatures are below 41°F. and the Norwalk sewage treatment plant is in satisfactory operation; and (2) That area enclosed by a straight line beginning at Noroton Point, extending to the pier at Wilson Point, provided that permits may be granted for the taking of market shellfish from that portion of this area outside of a straight line from the northeast extremity of Bell Island to the pier at Wilson Point after October 1st and before May 1st.

5. WESTPORT The tidal waters of the Saugatuck River north and west of a straight line extending in a northeasterly direction from Bluff Point to the western extremity of Hall Island.
6. BRIDGEPORT That area enclosed by a straight line extending in a southeasterly direction from Shoal Point to Penfield Reef Light, thence by a straight line in a northeasterly direction to Point No Point.
7. STRATFORD-MILFORD Housatonic River. The tidal waters and flats of the Housatonic River north and west of a line from Stratford Point Light extending northeasterly to the bell buy at the mouth of the river, thence in a straight line to the Outer Breakwater

Light, thence along the breakwater to its norther termination at Milford Point.

8. **MILFORD** That area enclosed by a straight line extending from Welch's Point approximately 19 degrees north of west through No. 4 buoy at the south end of the channel in Milford Harbor, to the mainland east of Great Creek.

9. **NEW HAVEN** That area inside of line extending from Oyster River Point along the west breakwaters to New Haven Light, thence along the Luddington breakwaters to their easterly extremity, thence in a straight line to Southwest Ledge Light, thence along the east breakwaters to their easterly extremity, and thence in a straight line to Morgan Point.

10. **EAST HAVEN AND BRANFORD** The tidal waters and flats of the East Haven River north of an east-west line through the northern extremity of Kelsey (or Darrow) Island.

11. **BRANFORD** The tidal waters and flats of the Branford River east and north of a straight line extending due south from Branford Point to the mainland on the south side of Branford River, including the waters and flats of Sybil Creek.

12. **OLD SAYBROOK-OLD LYME** The tidal waters of the

Connecticut River enclosed by a straight line from the light at the southern end of the breakwater at Lynde Point Old Saybrook in a northeasterly direction to the shore end of the peninsula ending in Griswold Point, Old Lyme.

13. GROTON-NEW LONDON New London Harbor and the tidal waters of the Thames River and Baker Cove, Groton, enclosed by a line extending due south from the extremity of land south of Trumbull Airport to Bushy Point Beach, thence along the north shore of Bushy Point Beach to the western extremity of Bushy Point, thence in a straight line to the eastern extremity of Pine Island, thence along the north shore of Pine Island to its western extremity, thence in a straight line to the bell buoy at Sarah's Ledge, thence in a straight line to the buoy at Rapid Rock, thence in a straight line to the mainland at Seaside Point.

14. GROTON Mumford Cove The tidal waters and flats of Mumford Cove north of a straight line extending easterly from Mumford Point through buoy No. 8 to Groton Long Point just south of the mouth of Venetian Harbor.

15. GROTON That area enclosed by a straight line extending in a southwesterly direction from Ram Point on Mason

Island to the light east of Morgan Point, thence by a straight line extending to the southern extremity of Morgan Point, thence along a straight line running in a northwesterly direction to the point at Westview including West Cove, the shore in the vicinity of Noank, Six-Penny Island and nearby shore line, and the tidal waters of the Mystic River.

16. STONINGTON A. That area enclosed by a line from Wamphassuck Pt. extending in a southeasterly direction along the breakwater to its easterly extremity, thence in a straight line to the Conn.-Rhose Island state boundary, and thence along the state boundary through Little Narragansett Bay and Pawcatuck Civer - including Stonington Harbor, the shore between Stonington Harbor and Wequetequock Cove, Wequetequock Cove, the tidal waters of Pawcatuck River, and Little Narragansett Bay. B. The waters of the Mystic River north of Ram Point and including the westerly and northerly shores of Mason Island west of Mason Island west of Mason Island Bridge and the shore of the mainland north of Mason Island Bridge.

NEW SHELLFISH CLOSURE AREAS

The following areas were closed for the taking of shellfish as of June 1966.

A. (1) Sherwood Mill Pond (Westport) - "The tidal waters and flats of Sherwood Mill Pond north of foot bridges at outlet to Long Island Sound and at Mill Creek above outlet to Long Island Sound."

B. (2) Mill River (Fairfield) - "The tidal waters and flats of the Mill River north of a straight line extending easterly from the town dock to the northern end of the east breakwater, seasonally between May 1 and September 30."

(3) Extension of the present Bridgeport closure area to Pine Creek Point, Fairfield, and to Stratford Point, Stratford - "That area enclosed by a straight line extending from Pine Creek Point to the buy located approximately 1,000 yards south of Pine Creek Point and thence by a straight line extending in a northeasterly direction to Penfield Reef Light, thence by a straight line extending in a northeasterly direction to Stratford Point Light."

C. (4) Thimbles Islands - Stony Creek area (Branford) - "That area enclosed by a line extending from the

Brown Point Light in a southeasterly direction to the southern extremity of Outer Island, thence in a northeasterly direction to the western extremity of Narrows Island; thence due north to the mainland at Leete's Island, seasonally between May 1 and September 30."

D. (5) Hammonassett River (Madison and Clinton) - "Tidal waters and flats of the Hammonasset River north and west of a line extending from the northern extremity of Cedar Island to the mouth of the Hammock River, including the Hammock River and the Indian River, seasonally between May 1 and September 30."

E. (6) Rocky Neck (East Lyme) - "The tidal waters and flats within 500 feet of the shoreline between the mouth of the Four Mile River and the southern extremity of Rocky Neck, seasonally between May 1 and September 30."

F. (7) Bride Brook (East Lyme) - "The tidal waters and flats of Bride Brook above the mouth to Long Island Sound."

OTHER FACTORS

Several scientists have concluded that the Osprey is declining and many face extinction as a result of the concentration of chlorinated hydrocarbons such as DDT. It is suggested that monitoring of the environment for this and other types of environmental pollution is an appropriate function of governmental agencies.

While the Thames Estuary is monitored on an intermittant basis for pollution of the estuary by radioactive substances connected with the construction and refurbishing of atomic submarines in that area it is indicated that continued monitoring would be desirable.

We commend the electric utilities for their willingness to conduct continuing ecological research on the flora and fauna and the possible effects on the resource connected with the production of nuclear power at the Connecticut Yankee Atomic Power Company Plant on the Connecticut River and the Millstone Point Plant in Waterford. We hope that this type of research will continue at other sites which may be located on Long Island Sound in the future.

We must look to the day - and it cannot be too far away or the opportunity may be lost - when our estuaries are the subject of rational management through the cooperation of federal, state and local authorities as well as that of industry, universities and private citizens. To this end we need an intensification of research work on the complicated physical dnd biological processes of estuaries. We need to know a greal deal more about the effects of specific pollutants - industrial, sewage, pesticides, siltation, etc. - on commercially important species as well as on the entire community of organisms that are so closely interrelated with the commercial forms. We need more knowledge of the effects of damming, rate of flow, diversion of water, and artificial changes in shape of estuaries. A combination of imaginative engineering practices and improved knowledge of the biology, geology and physical and chemical aspects of estuaries could lead to a situation in which we could predict the effects of man-made changes and be in a position to make rational choices between alternative proposals. Under these circumstances we would be able to achieve a balance of uses for estuaries that would include food production, waste disposal, recreation, navigation, scientific research and esthetic enjoyment.

One of the important aspects of such research is certainly the setting of rational and knowledgeable limits to pollutants to be tolerated in each estuary. It is vital in this connection to preserve some estuaries in a natural state to serve as standards and as sources of scientific information about estuarine processes.

THE FUTURE

It is obvious that if the events of the last several decades continue, the future of the coastal and estuarine waters of Connecticut is dismal. There are steps being taken that are promising, and which cause a ray of hope to be seen by groups and individuals interested in the proper use and management of these resources. Connecticut's interest in abating water pollution is the most significant. Public interest in the wise use of these resources is increasing and hopefully womething will be done "before it is too late."

It seems apparent that the future of the resource will be dependent on public and private policy regarding its use or misuse. For this reason it seems appropriate and necessary to have a national policy on coastal and estuarine waters. The coastal and estuarine waters located along the Atlantic, Gulf, and Pacific Coasts are valuable natural resources to the several states and are of national significance when taken together as a unit. A national policy on coastal and estuarine waters could be used as a basis to establish standards of water quality, requirements and standards for construction of navigation works, dredging, etc., to develop incentive programs for the states, local governments, and private groups for the preservation, protection, and/or restoration of these resources. At the present time it seems feasible to attempt to preserve as much as possible of the remaining coastal wetlands in their natural state. It would also seem advisable to explore the feasibility of creating modified or artificial environments to enhance the flora and fauna of these areas. If the coastal and estuarine waters are to make a substantial contribution to the environment it will be necessary to preserve that quality which remains, to restore areas that have been lost to pollution and to upgrade the environment significantly.

FUTURE USE OF THE RESOURCE

The coastal and estuarine waters are suited for a wide variety on compatible uses. With the restoration of water quality they will be more ideally suited for water contact forms of recreation such as bathing.

The upgraded resource should provide a suitable environment for the production of an increased quantity of shellfish and finfish if other factors that are presently unknown are not found to be making a more significant contribution to the decline of the fisheries resource than is presently believed.

If most of the present coastal wetlands are preserved the wildlife in these areas should stabilize itself to near present levels of population. The effects of the development of areas immediately adjacent to these areas will probably have a negligible effect on the flora but it is anticipated that the fauna will decline to some extent.

The dollar value added as a result of these efforts can be significant in addition to the immeasurable value of a clean and healthy environment which has contributed so much to the quality of life in this state.

We cannot allow the resource to be used as a disposal area for sewage, abandoned automobiles, litter, and other wastes as it has been in the past. Society cannot continue to look at the resource as something to be exploited, filled, dredged, and/or polluted; a better way must be found.

MANAGEMENT SYSTEMS

If a national policy on coastal and estuarine waters is established at the Federal level, an agency at that level of government should be given the power to enforce standards for the resource. The example of the program of the New England Interstate Pollution Control Commission could be followed. Such an agency should also have the power to regulate resources created or established by it directly.

At the state level of government agencies presently involved in various activities in our coastal and estuarine waters should develop a policy that recognizes the problems in this area. Such a policy could be developed by the Department of Agriculture and Natural Resources under the provision of Section 2 of Public Act 536 of the 1967 Session of the General Assembly.

The State Board of Fisheries and Game should have funds to acquire areas of interest to them either directly or through cooperative programs with agencies such as the Fish and Wildlife Service of the U.S. Department of the Interior. This agency and the Shellfish Commission have an important role to play in the future management of this resource and their programs of research, regulation and enforcement should be supported.

The State Department of Health has been sampling the coastal waters on an intermittent basis in the past. Funds have been so limited that it has only been possible to sample half of the coast each year. If these waters and waters along the Housatonic, Thames and Connecticut Rivers are to be used for bathing at some future date a regular sampling program will be imperative. While funds for this type of program and the extension of sampling to inland waters have been sought in the past they have not been forth coming. Such a program would enhance the protection of the public from obvious health hazards that may arise.

The Water Resources Commission should seek out all of the facts on the effects of dredging and filling and should develop firm policy regarding the issuing of permits in this area. The Commission has taken a cue from the citizenry in the area of pollution control as a result of the Clean Water Act of 1967. Water quality standards have been established and orders have been issued to hundreds of offenders. Soon additional facilities will be in operation and the public should continue to support this landmark program. Connecticut should provide additional staff to the Commission so that they will be able to continue to do their job effectively.

Local governments through the adoption of flood plain zoning, open space plans, and acquisition programs can do a great deal to protect the coastal and estuarine waters of the state. The willingness of the local communities to get on with the job of pollution control will be instrumental to the restoration of the resource. Local communities should feel willing to take advantage of incentive programs offered by state and/or the Federal government to preserve, protect, and restore these resources.

Private groups such as Save the Wetlands Committee, Inc., and this Assocition, should continue their efforts to inform the public on questions of importance effecting these resources and they should continue their efforts to form and implement sound management policies.

The examples of good stewardship shown by groups such as the National Audubon Society, The Nature Conservancy, local land trusts, and numerous private owners should continue to provide an example to others.

Through these efforts the protection of the resource should be assured.

SUMMARY

In the statement which we have submitted for the Connecticut Forest and Park Association, Inc., we have attempted to outline the effects of pollution and other environmental disturbances on coastal wetlands, the total recreation resource, and the shell and finfish resources in the coastal and estuarine waters of the State of Connecticut.

We have also noted that abatement of environmental pollution will enhance the value of the resource significantly particularly in the area of restoration of the shellfish and finfish habitat and in providing increased opportunities for water contact outdoor recreation. Arresting the destruction of coastal wetlands will preserve the flora of these areas but the fauna is likely to be disturbed to some extent by activities adjacent to these areas.

The outlook for the future of these resources will improve if public and private policy regarding the use of these resources if orientated to their preservation, protection and restoration. A step in the right has been taken as evidenced by Connecticut's willingness to adopt an aggressive program of pollution abatement. At the present time an effort should be to preserve most of the remaining coastal wetlands through programs of acquisition by state and local governments and private groups and individuals in addition to appropriate legal protection through zoning and other legal devices.

We feel that the establishment of a national policy on coastal and estuarine waters including standards of water quality and other appropriate devices for the protection of the resource is appropriate.

It is also imperative that state agencies establish a policy which recognizes the problems in this area and this could easily be done under the provisions of Section 2, of Public Act 536 of the 1967 Session of the General Assembly. In addition to this a stepped up state acquisition program, increased sampling of water quality, and an increased staffing of the agencies involved in these resources is in order.

Local governments should develop logical plans of development which will recognize the tremendous value of our resources and adopt realistic programs to protect them.

Private groups will play an important part in bringing resources problems to the attention of the public and in pressing for the implementation of sound management programs.

Private groups and individuals will also be effective stewards of resources that they acquire and in some areas will be able to protect key areas more effectively than public agencies.

We are appreciative of the opportunity afforded us to participate in this public meeting and we hope that as a result of meetings such as this that positive

T 4

steps will be taken to preserve, protect and restore the coastal and estuarine waters of Connecticut and the Nation.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much, Mr. Hibbard.

I think we can through these slides very quickly.

There are about 20 more people who want to be heard. If we limit it to ten minutes a person we should be out of here by 5:30.

(Slides were exhibited.)

MR. HIBBARD: I actually thought this would be worse than it is but it is bad enough anyway.

Next slide.

The areas in red are those areas which have been closed for bathing by the State Department of Health. I think we must recognize that the present staffing of the Department is such that they sample only half of the area each year. This leaves quite a little to be desired.

In other words, they should be able to sample the whole coastline and inland waters for bathing. There is quite a little hazard to health and safety in this regard.

You can see the mouth of the Housatonic. It is quite well polluted, and the same for the New Haven Harbor. It is also true of the mouth of the Connecticut River where the water quality in some cases may be quite high but there is a fear, there is polluted material being washed in by the tides.

The Thames estuary, certainly the Groton and Waterford-New London complex is quite polluted. Also there is a danger of pollution spreading to adjacent beaches. Also, on the Rhode Island line we have a problem there.

The next slide, the fourth and last slide shows the shellfish enclosure areas and the industrial zones on the same map. The situation is black, to say the least. You can draw your own conclusions, but there are not too many areas where shellfish may be taken legally in this state.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much. We will stand adjourned until 2:00 o'clock.

(Whereupon at 1:05 p.m. a luncheon recess was taken to 2:00 p.m.)

-oOo-

AFTERNOON SESSION

CHAIRMAN KLASHMAN: Will you come to order, please.

We have about 20 more people who want to be heard.

The next two people I am going to call on are Mr. Willerford, principal sanitary engineer of the Connecticut State Department of Health and Mr. Ernest Bontya, engineer of The Shell Fisheries. After these two gentlemen, Mrs. Karen Nangle, Mrs. Robert Nangle.

If any of you have a statement that is two minutes or less I would like to give you the opportunity to be heard before we get into the longer statements which will run ten minutes. If you will give your names to Mr. Farlow, we will see that you get on after these three.

Any of your statements can be submitted for the record if they are longer.

Mr. Willerford.

MR. THEODORE C. WILLERFORD: I am Theodore C. Willerford, principal sanitary engineer with the State Health Department. I am going to read a short statement from Franklin M. Foote, Commissioner of Health, State of Connecticut. This is less than two minutes, I believe. It will deal with specifics on uses of tidal estuaries where public health is concerned.

The tidal estauries in the State of Connecticut represent an invaluable asset to the citizens of the state in terms of recreational potential and economic development. These values are now threatened by extinction due to sewage and industrial waste pollution. However, it is the opinion of the State Health Department, based on analytical sampling and sanitary surveys, that most, if not all, of the major tidal estuaries can be saved from the threat of pollution and, in fact, their value enhanced by a responsible program of pollution abatement. From the public health standpoint, bathing and shellfishing are two uses of tidal estuaries which are most damaged by pollution, and we feel that pollution abatement would have its greatest value to the people of Connecticut in reclaiming and protecting the tidal estuaries for these uses.

We would like to make the following specific comments in regard to estuarine pollution in Connecticut:

1. The Connecticut River is unique in the northeastern

United States in that it is one of the few major rivers which does not have a large city located at its mouth, discharging sewage effluent into the estuary. The lower Connecticut River, below Middletown, is broad, lined with sandy beaches, and subject to tidal flushing. There is no major source of pollution in this area of the river. There are large areas of open space along the river, including several state parks. The State Department of Health has done considerable bacteriological sampling of the river in this area. This has generally shown a high degree of pollution in the main river channel, but has shown the coves, inlets and areas of the shore remote from the channel to be of suitable bacterial quality for swimming purposes. We have not recommended swimming in the lower Connecticut River because of the possibility that pollution might be carried from the channel into the bathing areas by variations of the tide, wind direction and stream flow. It is our opinion that with secondary treatment and chlorination of the existing upstream sewage discharges as is already planned, the entire lower Connecticut River would be suitable for bathing purposes, and could be developed into a major rec-

recreational asset.

2. The Thames River south of Norwich lies in a broad valley subject to tidal exchange which affords considerable dilution of sewage effluent discharged into the tributary rivers upstream. Between Norwich and New London there is no large source of sewage pollution. There are a number of sandy beaches in this area, as well as a considerable amount of open space, including two state parks. The State Department of Health has done some sampling of the Thames River in this area. It is our opinion that the installation of secondary treatment and chlorination in the Norwich and New London-Groton areas as is already planned, will produce considerable upgrading of the sanitary quality of the river. We would expect that this would make a large area of the river between Norwich and New London suitable for bathing purposes. Furthermore, such pollution abatement would afford further protection for existing bathing areas in the New London-Groton area which otherwise might become polluted by sewage discharges from increasing population in the area.
3. The lower Housatonic River does not contain as many potential bathing areas as either the Connecticut or

Thames rivers. This is mainly because of lack of open space or sandy beaches. However, the Housatonic River in the tidal area of Stratford and Milford is probably the most valuable area in the State of Connecticut for the propagation of shellfish. Pollution abatement now being planned should protect this valuable natural resource. Such pollution abatement would also afford further protection for existing bathing areas near the mouth of the river in the towns of Stratford and Milford.

4. Pollution abatement that is being planned should result in an enhancement of the sanitary quality of large stretches of the Pawcatuck and Mystic rivers in the town of Stonington, although the exact benefits which would result will depend on the location of sewage treatment plants to be built in the areas. The benefits resulting from pollution abatement on the other tidal estuaries in the State of Connecticut are more difficult to evaluate. Many of these are heavily built up, and it is questionable whether additional recreational development would be possible. However, there are a great many areas such as Stamford, Norwalk, Bridgeport and New Haven, where there are existing public beaches

which are threatened by increasing pollution. Pollution abatement on these estuaries should protect and enhance these existing recreational facilities.

5. There are many areas in Long Island Sound which have been closed to the taking of shellfish because of pollution. There are many other areas which have not been closed but which would have to be closed in the future because of increasing pollution. Pollution abatement now being planned would result in most cases in eliminating the need for additional shellfish closures, although in most cases the existing shellfish closures would have to remain in effect for protective purposes. However, the enhanced sanitary quality of the waters within the closure areas would probably promote increased propagation of the shellfish themselves resulting in economic benefits to the shellfish industry and the State of Connecticut.

The Connecticut State Department of Health has enthusiastically endorsed and assisted the pollution abatement program presently under way in the State of Connecticut. In no area will greater benefits result than in the tidal estuaries of the state. Following completion of the pollution abatement program, this department will work closely with planning, development, recreational, shellfish and health agencies to insure that the citizens of the state will obtain the maximum use of the tidal estuaries of the state consistent with the objectives of public health.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any questions?

If not, I would now like to call on Mr. Ernest Bontya. Is he here?

If not, Mrs. Robert Nangle.

Those people who have indicated they have statements of two minutes or less are Mrs. Nangle, Mr. Bormann, Mr. Williams, Mrs. Byrne, Mr. Hylwa, Mrs. Brown, Mr. Greimann, Dr. Quinton and Mrs. Conover.

If there are any others, please see Mr. Farlow.

MRS. ROBERT NANGLE: Although I have studied water control and conservation as a member of the League of Women Voters and as a member of the Advisory Conservation Commission in Darien, I am speaking as an individual resident of the town. My statement, although personal in nature, I think could speak for many people who just would like to go in swimming on a hot day.

For my husband, myself, our four year old son and two year old daughter the immediate recreational and aesthetic values of the Sound that we love, eclipse the far reaching ecological and economic values which are more vital to the welfare of society as a whole; nevertheless, those elements which destroy the cherished values the Sound has for our small family, also threaten the very balance of nature and economic well being of thousands of other people.

The recreational and aesthetic pleasures we derive from the Sound are damaged to the extent that many times during the course of the summer, I return from the beach without swimming because the water is cloudy to the point of being opaque within one foot of the water's edge; because it has been covered with foamy scum or oil slick, or clogged with excessive amounts of seaweed; because it is filled with refuse such as large splintery planks, plastic bags, cigarette packages, butts, watermelon rind, oil and beer cans; because it is filled with garbage such as sandwich fragments, carrots, potato chips, dead fish and scaled fish; each of which, on occasion, other little children as well as my children have carefully picked out of the water and carried up the beach for identification saying, "What's this, Mummy?"

I know, after reading reports from the Governor's Clean Water Task Force, Water Resources Commission and the Federal Water Pollution Control Administration, and after my own observations, that the sources of these kinds of pollution are not only littering from the beaches and from boats, but chemical and bacterial pollution from industrial outflow and inadequate sewage disposal plants. It seems to me that the number of industries and communities without secondary treatment, whose outflows and sewage disposal plants empty into the tidal waters of Connecticut, is just too great for the Sound to absorb without lowering the oxygen level in the water drastically enough to effect the grim conditions that I have tried to catalog with Spartan care. These conditions exist though the water is consistently rated A at Weed Beach where we try to swim, and A or B at Pear Tree Point Beach, as a result of one sampling made every 10 days by the Darien Sanitarian.

I propose that littering at the beach and from a boat be subject to a fine of two hundred dollars, the same as that for littering our state highways; that laws be passed regulating water testing procedures so that weekly analyses be made comprised of four samplings: two taken at high and low water and two taken at intermediate stages; that towns be given an incentive to complete secondary sewage treatment plants before the deadlines; that an attempt be made to enforce the laws, acts and ordinances we do have while we work towards a comprehensive pollution abatement plan, so that one day we may see that at a distance of a stone's skip, the water is blue, and may look through limpid waves at the shore to find shell fish burrowing away from our toes.

CHAIRMAN KLASHMAN: Thank you.

Any questions?

If not, I would like to call on Professor Bormann.

MR. WALTER S. BOARDMAN: Mr. Chairman, Professor Bormann could not be here but asked me to present his statement.

It is being presented but in the interest of time I would like to read one sentence from that report.

CHAIRMAN KLASHMAN: Would you mind identifying yourself?

MR. BOARDMAN: Yes. I am Walter S. Boardman of the Wilderness Society.

CHAIRMAN KLASHMAN: Professor Bormann's statement will be put in as if it were read.

MR. BOARDMAN: Following is the statement of Professor Bormann:

I would like to have the following statement read into the record of the public meeting on the impact of pollution on our coastal waters.

The estuary-wetland system serves many vital functions in terms of aesthetics, open space, migratory and resident birds, maintenance of a seacoast atmosphere and so forth. Undoubtedly these and other aspects will be covered in detail by the various respondents. I would like to focus my remarks on the relationship between maintenance of the biological health of our coastal estuarine wetland systems and the world food problem.

Among many of our citizens, the ecological role of estuaries, bays, and wetlands is little understood. Wetlands, in particular, are considered by most people as waste lands whose only future is some form of commercial development. To see how far this view predominates, it is only necessary to travel the Connecticut coast between New Haven and New York City.

For many years, scientists have recognized bays, estuaries, and associated wetlands as unique biological areas with distinct flora and fauna, and these areas have been the subject of many investigations. However, it has only been within recent times that we have begun to gather the threads of this research into a coherent whole.

Modern ecological research is now showing that estuaries, bays, and coastal wetlands play a vital role in the interlocking network of life that far exceeds their limited geographical extent. Biological effects of these areas extends both landward and seaward; landward through exchanges with tidal rivers and through activities of aquatic life and of both resident and migrant bird population, and seaward through various kinds of exchanges with offshore waters.

We now know that these coastal areas are among the most productive on earth and that much of this productivity is exported to adjacent offshore waters where it helps to sustain our offshore fisheries. These coastal areas also serve a critical function in the reproduction of many commercial and sport fish; for example, flounder, smelt, cod, striped bass and shellfish.

Consequently, one of the primary functions of our estuary-wetlands system is its contribution to the maintenance of both sport and commercial fishing industries. The latter relationship is of special importance at this moment in world history. Well informed ecologists and demographers are predicting a massive world food shortage within the next decade. If, coincident with rising famine, we in the United States thoughtlessly continue to destroy our seaboard fisheries through haphazard pollution control or through indiscriminate destruction of wetlands, history will record our lack of judgment and the inability of our political system to meet the exigencies generated by our increasing population and our technological society.

I believe this point is of national and international import and that it should receive full weight in any plans of proposed study or management for coastal areas.

CHAIRMAN KLASHMAN: Thank you very much.

Mr. Williams, president of Natural Resources Council of Connecticut.

MR. EDWARD P. WILLIAMS: The Natural Resources Council of Connecticut is deeply concerned with the spread of pollution on the coastal waters of this state.

If present trends continue, the habitat and feeding grounds of wildlife and marine life will be more severely threatened, beaches will become unsafe for bathing and shellfish will become unsafe to eat. Because of coastal debris with attendant unpleasant odors, property values will fall. Recreationists will search elsewhere for their varied activities. The increased pollution from rivers and streams which has been so pronounced in recent years can no longer be accommodated by normal tidal flow. As a result, coastal pollution, if not checked, could accelerate at even faster rates than river pollution has in the past.

What to do?

1. Local conservation groups, land trusts, etc., should alert their members and their communities to the seriousness of the situation. Those who see others throwing debris along the shore or from boats should confront such persons and make known to them the cumulative effect of an individual's carelessness.
2. Local and state ordinances should be strengthened in order to provide severe penalties against those who are responsible for polluting or disfiguring coastal areas.
3. State agencies such as the Department of Agriculture and Natural Resources, State Health Department and the

Water Resources Commission should be allocated sufficient manpower and sufficient funds to carry out their responsibilities in this area.

4. Stricter regulations, and legislation if necessary, with respect to dumping garbage and emptying toilets from boats should be enacted immediately, with provision for rigid enforcement. The Coast Guard could play an important role in this activity.
5. Guidance from the FWPCA should be sought. Among its functions, the FWPCA should suggest legislation and methods of control to the states with adjoining shorelines so that uniform procedures for dealing with coastal pollution can be adopted.

Who is to act? We believe the task with which we are confronted represents a joint responsibility -- to be shared by individuals, local communities, the state and the federal government, with most emphasis on the individual's responsibility. For if he fails in his responsibility for self policing, any and all measures adopted by local communities, the state or the federal government are bound to fall far short of success. But with an aroused public awareness, any needed legislation is bound to follow.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

Do you have any questions?

Betty Byrne, Connecticut Valley Action Committee, "CONVAC."

MRS. BETTY BYRNE: The air and water pollution in the Connecticut River Basin caused by individual and commercial operations needs to be much more closely monitored in order to upgrade the present environment and to prevent further destruction of wetland plant and animal life. Indeed, we feel that the whole ecology of this region and of all estuarine areas will continue to deteriorate unless positive action is taken soon.

CONVAC considers this may best be accomplished by a combined tightening of federal, state and local laws.

A letter pertaining to this position and containing specific recommendations will be submitted to your Committee by the 9th of September, 1968.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

We will look forward to receiving your statement. It will be put in the record.

Mr. Walter Hylwa, president, Wildlife Federation.

MR. WALTER HYLWA: Mr. Chairman, members of the Board, ladies and gentlemen: my name is Walter Hylwa, I am president of the Connecticut Wildlife Federation. I reside in Meriden, Connecticut.

The Connecticut Wildlife Federation, which is the State affiliate of the National Wildlife Federation, comprising of thirty-two sportsmen and conservation clubs with a combined membership of over twelve thousand persons wishes to place on record the following statements.

The estuarine areas are those coastal regions such as sounds, embayments, lagoons, and other tidal areas where fresh waters meet the seas.

The estuarine areas are rich in a wide variety of valuable natural resources which provide spawning grounds for many species of fish and shellfish and habitat for waterfowl and other birds and for furbearers.

The estuarine areas offer uniquely valuable and scenic opportunities for many types of public outdoor recreation, including fishing, hunting, boating, camping, swimming, and nature study.

These areas have been damaged or destroyed by dredging for water development projects, by filling for industrial and housing developments, and by water pollution and siltation.

The Connecticut Wildlife Federation hereby expresses its belief that it should be a policy of the Federal Government to coordinate its efforts with State and local governments to identify those estuarine areas which are valuable for sport and commercial fishing, wildlife conservation, outdoor recreation, and scenic beauty, and to assist in the preservation, protection, and management, and that the States be required to develop suitable standards acceptable to the Secretary of the Interior which would preserve, protect, manage, and, if possible, restore them for the benefit of all the people through the establishment of a national system of estuarine areas.

Also that this organization is of the opinion that the Departments of the Army and the Interior should have the authority and responsibility for rejecting applications to dredge or fill in navigable waters when the projects adversely affect water supplies, create pollution problems, cause soil erosion, damage fish and wildlife resources or would result in hazards to navigation.

Thank you very much.

CHAIRMAN KLASHMAN: Thank you very much.

Mrs. Brown, please.

While Mrs. Brown is coming up I would just like to make one brief statement. The four slides which Mr. Hibbard showed are in color. When they are reproduced they will be in black and white since we cannot reproduce color. We will try to show the colors that you mentioned either by cross-hatching or some other way.

Mrs. Brown.

MRS. BERTRAND H. BROWN: The pollution and destruction of coastal wetlands has become a national crisis; we all know that, that is why we are here today.

A shocking shortage of food faces the world, yet nursery grounds for protein-rich fish and shellfish are filled for parking lots and garbage dumps. There is concern over depressed areas and creating jobs for semi-skilled people, yet a once proud fishing industry falls into decline. Water-based recreation areas bulge with too many people, yet the size and number of places suitable for relaxation continues to diminish.

It's impossible to put a dollar value on these considerations, but I do know that remaining estuaries are priceless and must be protected in all possible ways from both pollution and destruction.

It is very encouraging that the Federal Water Pollution Control Administration is conducting a study of estuarine pollution. People like me are counting on you to see that the pollution is cleaned up.

As far as management and preservation of remaining estuaries is concerned, I feel some sort of federal impetus is necessary. State and even local governments should be encouraged to preserve marshlands and should be given a chance to do so. If, however, they do not meet the responsibility in a reasonable fashion, the federal government should be ready to preserve remaining coastal areas through regulation where possible and through purchase where necessary.

Thank you for the opportunity to be heard on this vital issue.

CHAIRMAN KLASHMAN: Thank you very much, Mrs. Brown.

Any questions?

Dr. Richard Quinton, chairman of the Mayor's Advisory Council, Bridgeport, Connecticut.

DR. RICHARD QUINTON: Mr. Chairman, and gentlemen: I have not submitted a prepared statement but do wish very briefly at this time to make the following comments:

I am Richard Quinton, manager of forestry and conservation for the Bridgeport Hydraulic Company, a stockholder water utility. I am appearing today as chairman of the Mayor's Council of the City of Bridgeport.

The broad general interests and recent particular awareness of either the loss or the destruction of estuarine resources resulted in the recent passage by the Common Council of the City of Bridgeport of the Mayor's Advisory Council. This Board, very briefly, is currently reviewing at the local level some of the many, many aspects of the problem.

This recognizes, among other things, our need for assessment or reassessment of such functions as combination sewers, outfalls, tidal gates, pretreatment of sewage, industrial and municipal activities, harbor traffic, both commercial and pleasure, the problems of zoning, land acquisition, solid waste disposal, sanitary landfill, and many, many other cogent problems that have been mentioned.

Briefly, in summary, we concur in the opinion that a comprehensive overall estuarine management system, sufficiently flexible to be practical and sufficiently broad to be effective, should and must be established.

The Commission will submit, prior to your September 9th deadline, a written statement, if you please.

CHAIRMAN KLASHMAN: Thank you very much.

Mr. Stanley Greimann, deputy director of the Regional Planning Agency of South Central Connecticut.

MR. STANLEY GREIMANN: My name is Stanley Greimann. I am the deputy director of the Regional Planning Agency of South Central Connecticut.

I have submitted a written statement on behalf of the Agency. In the interest of time I will read only the concluding statement of that document.

Estuarine areas are the common meeting ground of land and sea. As such they play a vital role in the life processes of many forms of plant and animal life and are essential to the maintenance of a balanced natural environment. Mankind's propensity for polluting and destroying these areas in the pursuit of his own destiny seriously threatens this balance.

Unspoiled estuarine areas perform many useful functions for the human community which should be recognized and protected:

1. They are the breeding ground and early home for many species of salt-water fish that are sought for both commercial and recreational purposes.
2. The mingling of fresh and salt water that occurs in them provides the natural habitat for various forms of edible shell fish so highly prized by many people.
3. They provide cover and food to many species of upland animal and bird life and as preferred habitat for various kinds of migratory water fowl.
4. They act as a protective cushion against the furies of the sea, acting as a giant sponge to reduce the impact of wind and wave upon human settlements.
5. They give welcome open-space relief to continuous urban development with its insatiable appetite for land.

The ecology of these areas is extremely complex and easily upset. The taking of shellfish has been seriously curtailed by pollution of the estuarine waters to the point where a once thriving industry has all but disappeared from South Central Connecticut. Other species -- equally beneficial to man -- are endangered by this spoiling of their environment through mismanagement and lack of satisfactory controls. All such areas along the seaboard should be studied and rated as to their potential value by experts in the field. Those recognized as having prime importance should then be given every protection possible by federal, state, and local laws. If outright acquisition is required to provide the degree of protection from pollution and degradation deemed necessary then sufficient funds should be made available for the purpose and a campaign to preserve them initiated. Adjacent uplands should also be subjected to stringent land use and pollution controls that will assure the estuarine areas of the kind of protection necessary to their continued proper functioning -- all in the long-range interests of the general public.

The Regional Planning Agency of South Central Connecticut has as one of its planning goals the preservation and enhancement of our natural environment. It is on record in support of local efforts to save the largest unprotected estuarine marsh area remaining in the region from incursions by development interests. It is currently studying the future needs for pollution abatement facilities to help maintain the water quality standards set by the State of Connecticut for its rivers, streams and coastal waters. It welcomes the interests and concern shown by the agencies involved in the National Estuarine Pollution

Study and whole heartedly pledges its support of the undertaking and of its anticipated recommendations. The time is long since past when we can rely on strictly local endeavor and private initiative to protect and preserve an irreplaceable asset so essential to our well-being as a nation.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

Mrs. Conover, Save The Wetlands, Inc., Connecticut Forest and Park Association.

MRS. W.S. CONOVER: Mr. Chairman and members of the Committee: I do not have a statement on purpose. I have the enviable position, or is it unenviable position, of being the director of five of the groups who have already made a report to your esteemed body. I am also the chairman of the Local Conservation Commission in Guildford, Connecticut, which Mr. Greimann just referred to, about preserving a large area which we are trying to prevent from becoming an exploited area, so-called. We are waiting for Mr. Curry and his Commission to come out with a definitive statement.

However, I do want to say we are very much encouraged that the federal government and the state governments are going to come to grips with the law. As far as we are concerned, we in Connecticut feel that there is a moral obligation, that we people who are interested in this kind of thing, the people of our states and our areas, have to come up with some definitive regulation which will put the responsibility on the proper place. We feel right now we do not know where to turn. It has been mentioned several times in this hearing earlier that people just don't know who has the last word.

The public has claimed that they are not informed about what is going on. I think we all are encouraged because of the fact that the "Sports Illustrated," "Life" magazine, "Playboy," "Forbes," "National Observer," "The New York Times," are all getting out not only factual pieces but folksy pieces and pieces which can be understood by the general public. We all think the more the people know about this, the more they cannot help but be interested and responsible.

I have been working for conservation in this state for over 35 years. People say to me, "Aren't you tired?" I say, "Why should I be tired? I am only just beginning."

However, I am not going to be able to do it for 35 years longer, I am afraid, so will you please do something about it right away?

Thank you.

CHAIRMAN KLASHMAN: Thank you.

That ends those who wanted to speak for two minutes or less. If I have missed anybody, if you will give your name to Mr. Farlow, I will appreciate it.

I would like now to call on Mr. E.H. Walton, vice-president of the United Illuminating Company.

MR. EDWARD H. WALTON: Mr. Klashman, gentlemen: I am Edward H. Walton, vice-president of the United Illuminating Company. My particular responsibility is for technical and environmental development.

United Illuminating is a public utility which serves approximately one quarter of the electric load in the State of Connecticut in a service territory which includes about 30 miles of shore line in some 7 cities and towns. In this area the Company owns and operates 3 major electric generating stations located on estuarine waters. It is one of the owners of the Connecticut Yankee Atomic Generating Station at Haddom Neck on the Connecticut River. It also owns, or is a joint owner, of 3 sites held for the future for power plant development.

Because of our direct interest in the long range prudent and economic development of coastal and estuarine waters in the best interest of all concerned, we are pleased to participate in this public meeting as a part of the National Estuarine Pollution Study.

UI has on several occasions stated its commitment to a deep concern for preserving and improving the environment of the communities in its service area. The concern is based on intrinsic ties with the economic and social well being of these communities.

We, like other electric power companies, are large users of water and the adequacy and quality of its supply is of utmost importance to us. This use is primarily as a coolant and the resultant discharge back to the source is significant only in its thermal effect. The technology for the control of chemical and biological effluents is well known and its application in power plants has been routinely observed for some time. Furthermore, the thermal effect is negligible on a global scale, that is with relation to the earth's overall heat balance. The significance of this thermal effect needs consideration with respect to the local body of water at the point of use - the lake or river or estuary at which a power plant is located.

A dominant factor in America's high standard of living is the availability of abundant, low cost electric power. As we now know the process for its generation, this highly usable form of energy requires large quantities of cooling water and there is no indication that impending technology will eliminate this need. Hence, adequate planning for future electric generation must include its requirements for an adequate supply of cooling water. The demand for electricity grows at a rate substantially faster than the increase in population because of the introduction of new uses which are quickly adopted and soon become necessities. Historically the growth rate has been about 7% per year which produces a doubling each decade. At this rate the peak load of the State of Connecticut, now 2,600,000 KW, will grow to more than 25,000,000 KW by the year 2000. For a number of reasons this figure may be overly conservative. Solutions to today's air pollution problems indicate substantial pressures in the near future for the general use of electric heat to reduce air pollution from the burning of fossil fuels in furnaces of homes, stores and factories. The widespread use of the electric car now being developed or any form of electric mass transportation system will reduce air pollution from automobile engines. The extent that power for these purposes can be generated by nuclear power stations will aid significantly the fight to curb atmospheric pollution and simultaneously increase the need for new generating capacity.

Therefore, to serve the loads anticipated by the year 2000 and to provide an adequate margin of reserve, the electric companies in Connecticut face requirements for total capacity of 30 to 40 million KW. The undertaking of the steps necessary to have this capacity in being when needed is a very large and very real obligation to the electric customers of the state.

Because of the cooling water requirements, it is evident that a major portion of this future generating capacity will need to make use of coastal waters. It is also evident that in our modern society it will be essential that these plants be developed in a manner which is compatible with the other pressing needs of the surrounding environment - land, air and water. It is fortunate that the advent of a safe, practical and economic means of harnessing the internal energy of the atom is giving our industry a tool which promises to make this compatible development a far more feasible objective than would otherwise be the case. The nuclear power plant designer has infinitely greater latitude to adapt the appearance and other characteristics of the plant to a variety of environmental requirements. And although it is true that by present technology nuclear plants must reject somewhat more heat to their cooling water than conventional plants, this requirement can be accommodated far more readily than some of the other environmental effects.

The design and construction of additional electric generating capacity - including the development of new sites - will require careful coordination with planners in all fields, including water use. Although the application of scientific techniques for evaluating thermal effect is relatively recent, there is beginning to emerge a body of knowledge in this field and we are confident that it can keep ahead of the need. Another spokesman for our industry is describing to this meeting the steps being taken in the Connecticut River Study, a program associated with the Connecticut Yankee Atomic Power Station, of which United Illuminating is a part owner. Similar or comparable studies will provide the scientific basis for evaluation of the water use of other new sites as their development is planned.

In closing, I would like to cite two quotations relative to the importance of new generating station sites in the overall scheme of things. One of these is from a report, dated December 15, 1967 to the governor of our neighboring State of New York by his Electric Power Committee which said:

> "The Committee believes that the demands the people of the State will be making upon the electric power industry in the next decade and beyond are, in their absolute terms, extremely large. They will call for continued technologic development, skillful conservation and utilization of both natural and economic resources, the maintenance of an economic climate conducive to attracting large amounts of new investment capital, and constant emphasis on cooperative and coordinated planning and operation to assure reliable, abundant and economical electric power generated and distributed in ways that are compatible with the public need for clean air, clean water, and a safe and congenial environment in which to live in and work."

The other quotation is from an editorial in a publication which serves our industry, The Electrical World, which said:

"Unless some thoughful constructive approach is worked out, this problem of plant siting will go from worrisome, to critical, to disastrous in the years ahead."

Thank you very much for this opportunity to appear and make this statement.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any questions?

MR. WALTON: If I may just expand a little bit on a question which you asked of Mr. Lebourveau, a former witness at this hearing, in connection with the use of cooling towers.

I must just point out that it is not only the cost of the cooling tower but other things about it which are significant in consideration. I am referring primarily to the size and effect on the atmosphere and the fact that in developing of compatible uses we are concerned with land use as well as water use, and use of the air and the aesthetic environment of the size of a cooling tower.

MR. De CAMP: Have you done much work on using a cooling system other than the cooling tower? In other words, ditches and cooling ponds and the like, realizing that they do take more land.

MR. WALTON: This is a good question. Specifically, to answer it, not very much has been done along the coast. I think it is quite evident that in the development of this large amount of power we are basically going to depend on the ocean as the heat sink in order to get the heat back into the ocean. Once you can get it back into the body of the ocean the amount of heat involved is negligible.

So our problem, as mentioned before, is a local one. Certainly, there are alternates in the question of means of getting the discharged water to a large body where it can be diluted and mixed.

MR. De CAMP: Thank you.

CHAIRMAN KLASHMAN: Are there any other questions?

MR. PELOQUIN: Mr. Walton, is the Connecticut Yankee using any nuclear device around East Haddam?

MR. WALTON: The water for the cooling purposes, is that what you meant?

MR. PELOQUIN: I am referring to returns without further cooling, returned directly from the condensers.

MR. WALTON: That's correct, the existing design at Connecticut Yankee has no provision for further cooling.

MR. PELOQUIN: There have been a number of studies, as I understand it, before and now going on while the plant is in operation to evaluate the impact of cooling on the stream. Has there been any indication as to how far down the effect of the cooling water is being felt in the river?

MR. WALTON: One of those major studies, the one at Connecticut Yankee, a subsequent witness here today, Mr. Hicock, will describe in more detail what is being done at that site.

The purpose of this study is specifically to determine the effect on the ecology of the river from the existence of the plant. It has been collecting information for the past three years as background and will continue to get more information after it is in operation. Mr. Hicock will tell you more about what information they are getting.

MR. PELOQUIN: Thank you.

CHAIRMAN KLASHMAN: Thank you, sir.

I would now like to call on Stephen W. Hitchcock.

MR. STEPHEN W. HITCHCOCK: My name is Stephen Hitchcock. I live in Madison, Connecticut. I represent only the interested public or the fanatic wing thereof.

This call was to include the values of estuarine areas. I have been assembling data for all uses, in both dollar and time, of one particular area, the Hammonasset River, which I will submit before the deadline to your Commission. I hope you have exact data as to how much usage an estuary does have.

I have got several recommendations here. I think most of them have already been mentioned. I think most of them are well known but there are one or two things I would like to mention.

One is that I feel there is only one real way to save the wetlands and that is by acquisition by units of government or by private agencies; not studies, not meetings, not articles in magazines, only acquisition.

I feel there should be a formulation of a policy that has concrete objectives and not statements of policy, but policies of specific properties and watersheds.

I feel the federal government should make even more of an effort than they already have in land acquisition. I think they should make a scientific research. That is going on in many federal institutions. There should be some way of feeding this back to the educational levels. There should be a better pipeline between research and the sources of information for the layman which, in conservation circles usually refers to the conservation magazines.

Basically these lands can be saved only by purchase. Someone is going to have to pay the price. Let us hope 50 years from now we will not be paying the price in lack of space in a clogged and polluted world.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much, sir.

I will now call on Mr. George Lebetkin.

The speaker after Mr. Lebetkin is Mr. Thomas Odell. If you want to come down to the front of the room, it will save some time, Mr. Odell.

MR. GEORGE LEBETKIN: Mr. Chairman and members of the Board, I speak as a private citizen, and it is a short statement.

It should be made a fact in law that where a given sewer authority discharges raw sewage from a known outfall, such location of outfall and time of discharge be published in the local newspaper under legal notices.

Estimated raw sewage volume should be included in such published notices.

Thank you.

CHAIRMAN KLASHMAN: Are there any questions? Mr. Odell, please.

MR. THOMAS ODELL: I have some slides but I would like to have them presented during the talk.

CHAIRMAN KLASHMAN: Are you submitting those for the record?

MR. ODELL: I will have to have copies made and sent to you.

CHAIRMAN KLASHMAN: If you would like to, we can make the copies for you.

MR. ODELL: Fine.

My name is Thomas M. Odell, chairman of the Westbrook Conservation Commission and I represent that Commission. This statement is largely the result of observations and records made by Mr. and Mrs. John W. Wilson of Westbrook who live year round, on the west bank of the Menunketesic River. The time involved spans ten years, from 1958 through the present with the most pronounced

T 5

effects being noticeable in the past five years. The Wilsons have been licensed to harvest and sell oysters throughout this period and have watched the decline of the oyster crop and the simultaneous migration of six marinas into the estuary. Two of these dredgings occurred directly across from the Wilson's oyster beds. One other dredging caused some oyster beds to be exposed at low tide causing the oysters to freeze in the winter.

May I have the first three slides?

This happens to be the first slide but this was taken in 1963. As you can see, it is rather high tide. It shows some of the dredgings from two marinas that went in subsequent to 1963. We will see a slide of that.

Now, that is the dredgings that were piled up on top of the salt marshes. This was taken in approximately 1965.

CHAIRMAN KLASHMAN: Excuse me, are these slides identified in any way?

MR. ODELL: Yes.

CHAIRMAN KLASHMAN: So that you will be able to tie them in?

MR. ODELL: Yes.

CHAIRMAN KLASHMAN: Thank you.

We will have to number those.

MR. ODELL: I have them numbered on the slides and I have them numbered on the pages.

CHAIRMAN KLASHMAN: If you can, talk about them by number so we can tie them in. Otherwise it won't make any sense.

MR. ODELL: Well, we lost slide number three. Slide number one is looking east from the Wilson's front yard. You can see the Menunketesic River and some of the salt marsh area surrounding it. As you can see, there are no marinas in that marsh land now.

Slide two, please.

The projector seems to be stuck so I will continue talking. We will come back to that.

Shellfish can only be harvested in areas certified by the State Department of Health (Reg. 19-13-B65). Each year the Wilsons start sampling the water above the beds in September and send them to the State Lab for testing. In the last five years they have not been able to harvest until November, the date of possible harvesting being dependent on the number of organisms of the coliform group and the exposure of the water to fecal contamination. Usually, in our area, boats start disappearing from the marinas in late October. A series of Connecticut Health Department certificates, received by the Wilsons, approving harvesting and selling of oysters is as follows; 1963-No. 1, 1964-Nov. 13, 1965-Nov. 30, 1966-Nov. 18. During the same period the number of bushels of oysters taken (available) were; 1963-21, 1964-15, 1966-1, 1967-0.

This is slide two from approximately the same position on the Wilsons' front lawn. You can see the establishment of several -- actually, there are three separate marinas there that you can see from this view.

Slide number four. That was slide two, we lost slide three. Will you show slide four, please?

This just shows a small section of that marsh land we just saw. That is undamaged. This was taken in 1960.

Slide five, please?

This is that same area in 1968. This has been completely dredged out, the pylons have been backfilled on to the marsh. A little is overgrown with rats right now.

Slide number six, please?

These are some oyster beds that have been exposed from the dredging. I don't suppose there are any oysters in there but there used to be. This, of course, is exposed at low tide and could be subject to freezing in the winter months.

That is all right now.

The oysters shared their plight with the osprey and bluecrabs. Three familys of the fish hawks nested on and adjacent to the Wilson property eight years ago, they have now disappeared. At the same time blue crabs could be found in abundance, as Mr. Wilson put it, "We could fill peach baskets full." Today only a few can be found in this area -- these reach the astounding length of 2".

The loss of these vital parts of the marsh ecology is enough to cause great concern! These have been observed -- some recorded, but what other pieces of this fertile landscape have also been lost? Aesthetically it is a matter of personal preference. The tranquillity of the salt marsh is my preference, other, I'm sure are entranced by the marinas with all the different shapes and sizes of the boats which call them home.

This, specifically, leads to, what we believe, is the main cause of this estuary's pollution.

The large boats, with "toilet facilities," that call marinas home. In fact some never leave "home"! The boat replaces the summer cottage. We have no sure laws governing the use of toilet facilities on these boats. We have one report of a boat that remains in the water in one of the mentioned six marinas -- year round, a permanent leach field of the estuary surrounding it.

Now may I have slide seven?

We are looking south now from approximately where the Wilsons lived, although this is the Boston Post Road. This is 1960. This is the mouth of the Menunketesic River.

Now, slide eight, please?

The same view, 1968. These are the marinas that we are looking at that harbor the big boats. The ones we looked at before, right now they are small but these are the ones that people get into and they stay in for the whole summer. Often, they hardly ever leave this particular estuary.

Slide number nine.

This is an aerial view of the Menunketesic estuary. It shows everything but the mouth of the river. The Wilsons property is one of these dirt mounds that are right in the middle here. The oyster beds were all by the Boston Post Road, which is that major bridge going across there. To your left you are going upstream towards the mouth of the Menunketesic River.

Last year the Connecticut Department of Health declared a house in Westbrook unfit to live in because of inadequate sewage facilities. The family was evacuated. The toilet of this house flushed directly into Cold Spring Brook which empties into Long Island Sound at Chapman Beach via a fair sized tidal marsh south of the Boston Post Road. The water in the stream is now fit for swimming, in 1967 it was not. We cannot, at this time, prevent boats from flushing into our estuaries or, for that matter, into any of our coastal waters. We need laws and/or devices which will control this sanitation problem.

We now have six marinas in this particular area, they have and will expand and more will start. Even if the sanitation is controlled how much more of the salt marsh resource can we dredge and fill and still provide enough habitat for our shellfish and salt water fish to complete their life cycles. It is a case of diminishing returns, with more boats and less gamefish the end product.

May I have slides ten to twelve, please?

This is another aerial view of the Menunketesic River and marinas. This area in here has recently been purchased by the owner of this marina with plans to dredge in here and put more marinas in here, more of the finger docks.

Next slide, please?

This is slide number 11.

CHAIRMAN KLASHMAN: The area you pointed at was to the left of the existing marina on slide ten?

MR. ODELL: Yes, to the left.

This, again, is 1960. I am just bringing this back so you can remember what it did look like since we have seen quite a few marinas.

Can we show slide twelve?

Now, this is another aerial view of the Menunketesic Watershed.

CHAIRMAN KLASHMAN: What number is this, please?

MR. ODELL: This is number 12.

We would hope to be able to protect the existing salt marsh here.

CHAIRMAN KLASHMAN: Do you want to describe this so it makes sense on the record?

MR. ODELL: We would like to protect the existing salt marsh that remains to the north of the now existing marinas. This would be to the left of the photograph.

Marinas have encroached upon this estuary. I don't know how many miles specifically it goes up in here but this is the last remaining one. There are several good marina spots along here and one particular owner --

CHAIRMAN KLASHMAN: You are pointing to the last marina?

MR. ODELL: The last marina, just adjacent to the last marina the people who own 12 acres of salt marsh in this area have this advertised as a marina site. There are two adjacent properties to this, moving upstream, which, one is owned by a member of our local conservation commission and we feel pretty safe it will remain in good hands. The other one is now in Probate Court. We have asked the State of Connecticut to come down and evaluate the land as acquisition property. They have done so and it has been recommended for acquisition. Whether this large parcel of land can be bought by the state will be determined by the amount of funds that are available.

We would like to see the land saved. The Westbrook Conservation Commission is not in a position to buy land at the present moment. We are not particularly interested in exactly who purchases it, we are interested in what is done with it. We want it preserved, we want the wetlands saved.

That is all for the slides.

As a concluding statement, let us protect the remaining salt marshes so that we may shore their values with people of our own generation and of future generations. We need uniform state laws providing protection and preservation of the remaining salt marshes and we need expanded publicity on the wise use and benefits of these resources. We have seen an increasing amount of concern for clean air via lots of publicity -- we need the same type of concern for the tidal marsh, front page stuff by well known politicians, scientists and educators!

This is the only way we are going to be able to do anything at a local level or state level, is to get the people interested in it.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much. Are there any questions?

MR. COWHERD: Excuse me, just for the record, I wonder if you would mind advising us as to what value has been established on these particular marsh lands?

MR. ODELL: You mean what value? You mean, in other words, how much they are --

CHAIRMAN KLASHMAN: You mentioned something about 12 acres of land.

MR. ODELL: I am not sure. We are in the process of trying to determine how much the owner is asking for this. It is somewhere close to $4 or $5,000 an acre, I believe. This was just a recent purchase by the present owner.

The other two parcels of land do not have a price on them at the present moment.

Now, I really can't say specifically. I know how much the land was sold for originally to the present owners but I don't know how much they are asking. I understand it is a substantial increase over what they paid, in about one year.

CHAIRMAN KLASHMAN: Thank you very much, Mr. Odell.

I would like to now call on Mr. Earl R. Howard, executive engineer, Metropolitan District Commission of Hartford.

Mr. Howard is not here.

Mr. J. Stanley Quickmire, Jr., Northeastern Field Representative of the National Audubon Society.

Following Mr. Quickmire I am going to call on Mr. Russell Hicock, Mrs. Thomas Cherry and Mrs. E.M. McClure.

If there is anybody who is not on the list, please see Mr. Farlow.

MR. J. STANLEY QUICKMIRE, JR.: Mr. Chairman, I am J. Stanley Quickmire, Jr., Northeastern Field Representative of the National Audubon Society. Thank you for this opportunity to express our support for State and Federal action to preserve the estuaries of Connecticut and Rhode Island.

The values of our estuaries are many. Aesthetically they provide an open vista to the sea -- clear and free of obstructions. They are open areas where one can stand and observe the beauties of the river's mouth and watch boats sail by and observe gulls dropping clams on the mud flats to crack their shells. The estuary is a place where individuals can observe the marsh grasses blowing in the sea breeze and see the migrating shorebirds and waterfowl feeding along the river's banks and flats. It is a place where migrating shad may be seen splashing their way to the upstream spawning grounds. To be of real aesthetic value, the estuarine water must be clean and free of pollution that ruins the water and fouls the air.

There are a great many personal reasons why our members enjoy the estuarine areas. One is just walking the beaches and flats, especially the Housatonic River estuary at Stratford and Milford. Observation of shorebirds, gulls, terns, and waders and waterfowl are at their best along our Connecticut coastal areas. Concentrations of 5000 shorebirds and 500 ducks can be observed every fall at Milford Point. These birds are feeding and resting on the banks and mud flats of this important estuarine zone. Clam diggers are seen daily nearly year round, digging for personal use (mostly for chowder) along most of our estuarine waters. Surf fishermen by the hundreds gather along the banks and breakwaters to catch a great variety of fish, especially the striped bass. In addition, I have observed many commercial bait operators cathing shinnrs, mullet, and minnows along these river mouth areas.

The estuary offers many recreationsl opportunities. The hunting of rails and waterfowl in areas such as the Charles E. Wheeler Hunting Preserve is a popular sport. Fishing for fin fish, oysters, clams, bait, crabs, and scallops is important for recreation as well as commercially. Wildlife observation and photobraphy, beach walking, exercising pets, swimming and wading, boating (motor, sail, canoe and small craft), and shell and marine life collecting are all a part of the recreational values of our estuaries.

The scientific and educational values include conducted field trips by conservation organizations, organized yearly bird census, waterfowl counts (this is one area where they concentrate), school field trips for study, Audubon Explorer study classes, and University Marine Laboratory studies.

It is ecologically important that we understand the interrelationship of fresh and salt water. It has value for all marine life as a spawning ground, nursery bed, nutrient producer, and therefore, needs to be free of industrial pollution, oil spillage, sewage and persistent pesticides.

The dollar value of sea food is extremely high. The value of the boating industry, marinas, docks, and related businesses is well known and increasing. However, seafood prices are becoming extremely high because of the scarcity of seafood which is mostly caused by pollution. When you have to pay $6.50 for a pound lobster dinner and $1.55 for a shrimp cocktail of only four shrimp, it is about time people began to wake up and take notice of the value of our estuarine areas.

According to an article in "The National Observer", August 12, 1968, Connecticut estimates its shellfish production at less than $2,000,000 a year. This is compared with $48,000,000 at today's prices in 1900. This state has lost two-thirds of its estuarine wetlands since the turn of the century.

Estuaries maintain a relatively constant water temperature, thus acting to moderate the extremes of heat and cold in their surrounding areas. The low estuarine marshlands also serve as a means of flood control, providing areas for excess run off. In addition, the spongy soil acts as a water purifier. Too, the marsh grasses serve as a guard against wind and water erosion.

All of the above points have great dollar values. Just look what it has cost the taxpayers for pollution control -- $150,000,000 in Connecticut alone. What happens when a hurricane comes up along Connecticut and Rhode Island and destroys homes and businesses built, in many cases, unwisely in estuarine areas. Our governors call it a disaster area and obtain federal aid. If these areas had not been filled in, mined, paved over, and built up, but had been kept as wetlands, little damage would be incurred.

How have our estuaries been damaged by pollution and how much? Soil still constitutes the major pollutant to our rivers. Fill operations of our wetlands poses one of the greatest threats to our estuarine zones. When the marshlands are once destroyed, they can never become marshes again. Bulkheading, dredging for marinas, buildings, and other construction must not be allowed in our remaining estuarine regions. Industrial pollution has caused such great damage to our marine life over the years that some estuaries have very little marine life left. Another threat is apparent in the disposal of thermal waste water. We are deeply concerned about what long term effects this may have on the estuaries. This abuse must cease now, before it is too late to recover.

We feel that in order to maintain the marine resources and stabilize suitable feeding, nursery, and productive nutrient building areas, our estuaries in Connecticut and Rhode Island must be totally preserved. Probably a combination of local, state, and federal management will best provide for the development and protection of our estuarine resources. Local zoning is needed, but will hardly provide the long term adequate protection necessary for the future. State acquisition for fish and wildlife purposes, or a network of federal holdings managed on the order of a National Wildlife Refuge System would probably be our only solution for preservation.

Whatever is the most feasible way to best preserve our estuaries must be done now. We heartily endorse this study by the federal government, but hope immediate action will be taken to put a moratorium on dredging, filling, bulkheading, polluting and other drastic alterations to our estuaries before it is too late. We cannot afford to destroy anymore of them if we are to remain economically, as well as ecologically, healthy.

Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any questions?

MR. De CAMP: I have asked this question before but I would like to ask it again, one of two questions.

We receive a considerable number of recommendations that we should have a combination of local, state and federal management of estuarine zones or areas or parts of estuaries, but we never seem to get a good particular case of what would be the relationship on the state-federal and local-federal basis. Can you give me an idea on this?

MR. QUICKMIRE: I am not sure. I think this is quite a puzzle, as to how this can be done. Perhaps federal ownership and state management with local zoning also to protect the private land owners and so forth. But how this can be arranged, I haven't any idea, as to how it would be worked out.

The Federal Wildlife System naturally likes large areas for waterfowl and so forth. We haven't any large areas other than five or six hundred acres. So whether the federal government would be interested in acquiring these areas, just to protect the estuarine areas or marshlands and the potential for the shellfish and so forth, is very difficult for us to decide. I mean, it is not up to a private organization to make this decision but, nevertheless it ought to be protected somehow and soon, not that we are against marinas, we have quite a few already.

MR. De CAMP: I have another question. The idea of a moratorium on the destruction of these areas has been proposed time and time again. Have you any idea how we would go about getting such a moratorium?

We don't have it. I don't think the federal government could do this. Would it be a state government situation?

MR. QUICKMIRE: I think probably the fish and wildlife could request the state water resources and the fish and games to request the towns to put a moratorium on until further studies or plans are developed, without usurping any prerogatives and being dictatorial in telling them that.

CHAIRMAN KLASHMAN: Are you talking about the state?

MR. QUICKMIRE: The federal government.

CHAIRMAN KLASHMAN: The Federal Game and Wildlife?

MR. QUICKMIRE: I think through their advice to the Fish and Game Departments and the Water Resources.

CHAIRMAN KLASHMAN: In the state?

MR. QUICKMIRE: Yes, so they can work together with the 21 or so coastal towns.

CHAIRMAN KLASHMAN: Thank you very much. Are there any other questions?

If not, I would like to call Mr. Russell Hicock, senior vice-president of the Northeast Utilities.

Following Mr. Hicock, Mrs. Cherry, Mrs. McClure and last, Dr. Richard J. Benoit.

MR. RUSSELL HICOCK: My name is Russell Hicock. I am senior vice-president of Northeast Utilities Service Company, with broad responsibilities for the long-range development of power supply facilities to meet the load growth of NORTHEAST UTILITIES.

NORTHEAST UTILITIES is pleased to participate in this important public meeting, and it is our hope that by so doing we may make some modest contribution to the National Estuarine Pollution Study.

The Northeast Utilities system numbers among its subsidiaries The Connecticut Light and Power Company and The Hartford Electric Light Company, Connecticut utilities which provide electric and some gas service to sixteen coastal communities on Long Island Sound. These companies also own, in whole or in part, seven major electric generating facilities either on estuarine waters or the tributaries thereto. Thus, it is clear that our operation as a public utility conveys a concern and responsibility for this coastal area.

The commitment of the Northeast Utilities companies to the orderly solution of environmental problems is both active and continuous. In a recent address before the American Bar Association, the President of Northeast Utilities, Mr. Lelan F. Sillin, Jr., underscored this commitment as follows:

> "We are required to balance considerations of economics with those of health, ecology, appearance, history, and open space, and must be prepared to find the latter factors may outweigh economic considerations and that other higher public uses are attached to the land than we can show for industrial, including public utility, purposes. However, to insure economic progress we must also have the essential public and governmental understanding and support required to expand our

resources to meet the economic needs of the people."

It is within this context that Northeast Utilities, later this week, will announce the formation of a special department for regional and environmental planning to be headed by a distinguished regional planner and economist. This department will consolidate and expand our already considerable capabilities by bringing together a staff of experts on regional land-use planning, conservation and ecology. This group will work with our engineers to assure a balanced approach in the planning of major plant development and expansion of our plants. It also will be available to assist the communities we serve in examination and support of programs directed to maintaining a quality environment.

We believe that there is a growing recognition on the part of government and industry and among the people-at-large that a balanced approach to the control of environmental quality holds the best promise for the future. It is not enough to sound the rallying cry "Pollution must go!" We must distinguish between harmful pollution and acceptable change. We must learn to evaluate the costs and the benefits of change in terms of the total spectrum of peoples' needs and aspirations.

We must learn to give appropriate weight to considerations of appearance, recreation and ecology as well as to health, economics and living standards in the evaluation of such costs and benefits.

We envision the coastal area as a rich natural resource which will contribute to the quality of living and to the general well being of the people of Connecticut and their neighbors. No estuarine body should be contaminated by any recognized pollutants. Many should be preserved from the intrusion of residential, business or industrial uses. Others should support the social and commercial activities so essential to the amenities of living and to the economic growth of the State.

Our own industry foresees that the dynamic increase in the use of electric energy will require expansion of our power sources at a rate far greater than has been needed in the past. At the present state of the art, a significant part of this expansion must be in base loaded thermal stations. Such plants reject large quantities of heat, the dissipation of which either to the air or to the water must be carefully managed, not only to avoid harmful effects but also to put to useful purpose those which may be beneficial. Since our estuarine and coastal waters appear to have greater capacity than most inland waters in New England to accept controlled heat loading without adverse ecological changes, it is our current thinking that we should look to our coastal areas for our major thermal plant sites. Thus we believe we have an immediate and vital interest in the purpose of this meeting.

We concur completely with a conclusion stated in the "Report of the Committee on Water Quality Criteria, Federal Water Pollution Control Administration, U.S. Department of the Interior, dated April 1, 1968 'that the unknowns far exceed the knowns in water quality requirements - even to the experts.'"

We therefore believe that this study is well timed and necessary. We are pleased that the scope of the study goes far beyond the identification and control of "pollution" in the commonly used sense of the word. We hope it will be responsive to our need to know much more about the natural phenomina of our estuaries. Not only do we need to know the degree to which they have been or may be affected by the activities of man -- we need to identify in detail what elements of the natural phenomena are affected by what factors and how.

We need to identify cause and effect relationships, that we may discriminate between man-generated changes that are harmful and those that are beneficial; that we may learn what uses are compatible and what are mutually exclusive; that we may develop and apply our advancing technology with knowledge and purpose rather than with speculation and emotion; that we may have enhanced environment associated with dynamic uses as well as with passive enjoyment.

We suggest that a system of state management will best provide for development and protection of our estuarine resources. Where waters of two or more states lie within one estuarine zone, federal coordination should insure full cooperation among the states involved. We think quality criteria should recognize that conditions unique to a specific site may be as important in establishing reasonable and effective control as those factors which are common to all locations. Such recognition is less likely to occur under federal management alone.

With the foregoing as introduction, we would now like to submit a brief report of certain of our activities which may bear upon your study. These are "The Connecticut Yankee River Study" and "The Millstone

Ecological Survey."

The Connecticut Yankee Atomic Power Company, which is owned by eleven major New England utilities, has been involved since early in 1965 in a thorough and comprehensive study of the biology, ecology and hydrology of the Connecticut River in the vicinity of Haddam Neck, Connecticut.

Dr. Daniel Merriman, Associate Professor of Biology at Yale University, Director of the Bingham Oceanographic Laboratory from 1942-1966, and presently Director of the Sears Foundation for Marine Research at Yale, is the director of the study.

The Connecticut River Study employs a full-time staff of professional biologists and hydrologists and has its headquarters at the Essex Marine Laboratory on the Connecticut River at Essex, Connecticut.

Some of the areas under investigation by the River Study staff include:

1. Hydrological surveys in which surface and bottom water temperatures, dissolved oxygen, pH and salinity are measured and recorded continuously at five monitoring stations in the vicinity of the plant.
2. Shad studies which include investigations of populations,

migration rates and spawning areas of adult shad, as well as behavioral characteristics of juvenile shad. To date, river study biologists have tagged over 10,000 adult shad and plans call for the fluorescent tagging of 100,000 juvenile shad or "downrunners" in 1968.

3. Studies relating to the type, abundance and growth rates of larvae and plankton.
4. Studies of resident fish species, including controlled laboratory experiments on behavioral responses of shad and alewives to changes in temperature and dissolved oxygen.
5. Studies of bottom fauna, a major food source for many of the resident fish species, changes in which may have an effect on the population of the residents.
6. A cooperative program with the Marine Research Laboratory at the University of Connecticut for the study of bacteriology and microbiology.

To insure that the study would fulfill its purpose of providing a sound scientific basis upon which any changes to the aquatic environment could be evaluated, the work of the River study staff is guided by an advisory board consisting of five recognized experts in the field of marine biology, all of whom live and work outside the State of Connecticut. The members of this advisory Board are:

Dr. James Atz
Department of Ichthyology
The American Museum of Natural History

Dr. Melbourne R. Carriker
Marine Biological Laboratory
Woods Hole, Massachusetts

Dr. Edward C. Raney
New York State College of Agriculture
Cornell University

Dr. David M. Pratt
Narragansett Marine Laboratory
University of Rhode Island

Dr. Richard R. Whitney
College of Fisheries
University of Washington

State and federal agencies cooperating in various degrees in the Connecticut River Study are: The Connecticut Water Resources Commission, the Connecticut Board of Fisheries and Game, Connecticut State Department of Health, the Marine Research Laboratory and Department of Biology of the University of Connecticut, and the Hartford Office of the United States Geological Survey.

The pre-operational phase of the River study was completed at the time pre-operational testing of the Connecticut Yankee plant was completed on December 1, 1967. This phase of the work has yielded a significant amount of valuable information on the biological and hydrological characteristics of the lower Connecticut River. The various investigations started in 1965 to determine the characteristics of the River before plant operation are being continued for several years to detect and evaluate any change that may result from the discharge of heated water to the Connecticut River.

In the Spring of 1968, a program was initiated to study the ecology of the waters of Long Island Sound in the vicinity of Millstone Point in Waterford, Connecticut, where Northeast Utilities is building a nuclear generating station. The purpose of this study is to determine the nature, abundance and growth rate of the various species of marine life in the area as it presently exists and utilize the baseline information to determine any changes which may occur as a result of electric plant operations at Millstone Point.

The ecological studies, which are being conducted by the William F. Clapp Laboratory of Battelle Memorial Institute under the direction of Dr. Nelson Marshall of the University of Rhode Island, include the following:

1. Exposure panel studies to determine the effect of

temperature and other environmental factors on the annual and seasonal growth rates of local marine organisms.

2. Shore studies consisting of periodic examinations of the rocky shore vegetation and macro-fauna to determine the effect of temperature changes on the abundance and growth rate.
3. Survey of commercial species using SCUBA diving techniques to make a continuing determination of the population of lobster, crab, shellfish, and flounder in the Millstone area.
4. Plankton population survey to establish the abundance and productivity of various types of plankton which form a major source of food for local shellfish.

These ecological studies, which are under the guidance and technical direction of Dr. Marshall and two other recognized marine biologists, are scheduled to continue for at least five more years.

In addition to the ecological studies noted above, Northeast Utilities is actively cooperating with the commercial shellfish industry in studies related to the utilization of the warm water effluent from its nuclear plants to accelerate and augment the commercial production of shellfish in Long Island Sound.

We think our studies will provide some of the data needed for better understanding of estuarine problems. We believe they are being conducted in harmony with the objectives and scope of the National Estuarine Pollution Study and exemplify the commitment of NORTHEAST UTILITIES to contribute to the solution of estuarine problems in cooperation with Federal, State and local government agencies as well as with public and private organizations and interests.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any questions?

MR. NEWMAN: Just a matter of clarification, Mr. Hicock.

For your information, the work that is being done by the University of Connecticut Marine Research Laboratory is supported by Federal Water Pollution and Control Administration on a grant basis and has been funds for the past two or three years.

MR. HICOCK: Yes, I recognize that.

MR. NEWMAN: I was very interested in this statement that you made on page four of your statement, "Since our estuarine and coastal waters appear to have greater capacity than most inland waters in New England to accept controlled heat loading without adverse ecological changes, it is our current thinking that we should look to our coastal areas for our major thermal plant sites."

What would be your reaction to a proposal that there be a moratorium on ~~this~~ in land construction of nuclear power in New England? Do you think that this would prove adverse to the power structure in terms of the network in New England?

MR. HICOCK: I think it very well might because to us it is very important that you give full consideration to the local situation for any particular site. Just to say blanket-wise that there should be a moratorium might be detrimental to the economic development of the industry.

I think in this context we have to say that I don't know of any one in the power industry who wants to degrade the environment. I think there is a fairly large body of technology available to control what is done with the environment. What is lacking is a knowledge of just what effect various degrees, and we are talking about thermal effect, what degrees of heating have on various elements in the environment.

MR. NEWMAN: The reason I asked this is because in any event you are anticipating that most of the larger thermal plants in New England will be along the coast.

MR. HICOCK: That would be my present thinking on it. It probably would be along the coast. The other types of thermal generation and certainly hydrogeneration probably will be away from the coast.

MR. NEWMAN: Thank you.

CHAIRMAN KLASHMAN: Are there any other questions?

MR. PELOQUIN: Mr. Hicock, have you developed data to date giving any indication of a change in the ecology of the streams below the Connecticut Yankee or hasn't that study progressed far enough yet?

MR. HICOCK: At the moment I am not prepared to give any real qualitative statement on it. Thus far the preliminary results appear to be very promising.

We are expecting to have the next report, I believe it is the 21st of October. That will contain evaluated information taken since the plant was in operation. All I can say is that our scientists tell us that everything looks very promising.

MR. PELOQUIN: Do you have any idea of what the temperature of the water is that is being discharged into the river? Any degree of increase, 20 degrees of increase or more?

MR. HICOCK: Here again we know what the water ~~it~~ is that's discharged from the condenser. We know the temperature as it goes down the canal and actually discharges into the river. What we don't know is the total effect of temperature lineally. lineracy?

The best information I have is the heated water pretty well stays on the surface and pretty well along the east bank of the river. We have not found any great amount of mixing, as I understand it, out into the stream, nor did it have any particular effect on the channel where the fish normally move.

I believe I am correct in saying that our investigation of fish migration has shown that the shad in particular pretty much stay in the channel and our plume ~~effluent~~ does not seem to get out into the channel.

MR. PELOQUIN: Thank you.

CHAIRMAN KLASHMAN: Are there any other questions?

If not, thank you very much, sir.

I would like to now call on Mrs. Thomas Cherry, the League of Women Voters.

Mrs. Cherry is not here.

Mrs. McClure.

MRS. EDWARD MILLER McCLURE: My name is Mrs. Edward McClure. This is an individual statement addressed to, "Mr. John S. Farlow," because our local paper indicated that this was the proper address, "Regional Coordinator, National Estuarine Pollution Study, North Atlantic Water Quality Management Center."

Dear Mr Farlow: We live at 33 Plymouth Road, Darien, Connecticut on a salt water pond fed by a tidal estuary called the Goodwives River, which empties into Long Island Sound. We believe the pond, river, and recently named Darien Harbor are being threatened with uncontrolled water pollution.

This is probably a classic example of a lovely town that is destroying its ecological inheritance through the "penny-wise and pound foolish" policies of a political system dominated by local commercial interests.

In 1967, the Town of Darien published a longrange "Town Plan of Development" which was aided by a federal grant (A copy is attached). This plan was not published as originally intended. Darien Planning and

Zoning Commission minutes of Sept. 20, 1966 and Oct. 4, 1966, show that one major recommendation -- to take immediate steps to acquire a fine, deep harbor location for Darien boating facilities -- was later removed from the plan, because inside information "leaked" and a lawsuit was threatened. Directly following this change of plan, moves now partially consummated have been made to concentrate all of the Town's boating facilities in the estuary of the Goodwives River, known as the "gut", ~~and in the~~ or recently named "Darien Harbor":

1. The town has attempted, so far unsuccessfully, to have the Goodwives River estuary and the Harbor made a federal harbor.
2. Water quality standards have been set (by the state) lower than "attainable", and lower than other areas better suited for boating facilities.
3. The Darien Boat Club, located in the "gut" adjacent to Pear Tree Point Beach -- one of the two town beaches -- was expanded by dredging the reedy wetlands of the river. A review of any chart of this area will clearly show how unpractical the "gut" is for boating and that there are other "fine, deep" harbors existing in the town.

We can find no records of any study by the Planning and Zoning Commission or others in the town of the potential of pollution resulting from the expansion of the Darien Boat Club due to the mooring of large boats with marine toilets and oil from outboard engines. (It must be noted that the "gut" lacks deep, cleansing currents needed to wash waste out to sea.) To our knowledge, no study was made prior to the approval of the expansion. In addition, the Town Health Officer, Dr. James V. Macgregor, in a letter dated Jan. 20, 1967, set conditions and limitations on the expansion; many of these sanitary requirements have been ignored. The Connecticut State Water Resources Commission held the required hearing on the Boat Club proposal on March 20, 1967. Dr. Macgregor's letter was not accepted and numerous written protests were ignored. The Commission unanimously approved the permit.

In addition, on January 24, 1967, the late Frederick P. Clark, author of the Town Plan and consultant to the town, warned the Planning and Zoning Commission that he foresaw traffic and parking problems which the Commission would be legally responsible for if it approved the expansion of the Darien Boat Club. Ignoring its own ordinances the Planning and Zoning Commission approved the plan and permitted it to be amended to permit cars to be parked at the water's edge.

In a discussion with Eric Mood, Assistant Professor of Environmental Health at Yale University, Mr. McClure and I learned that it is considered poor environmental health practice to permit such development in a shallow tidal estuary in which fecal matter, garbage, gasoline, and oil are carried by incoming tides into the shallow, reedy areas where they are deposited and exposed to the open air at low tide. Flies, mosquitos, and rodents there may transmit bacteria and, more importantly, the harder-to-detect viruses, over a large neighboring area. In addition, oil in reedy wetlands kills ducks and other wetland birds. We advised the Darien Planning and Zoning Commission of these facts, and they still approved the plan. A study of local and state records, if available, will substantiate these statements.

In an effort to appeal the Zoning Board's decision, we were put on the agenda of the June 21, 1967, meeting of the town's Zoning Board of Appeals. However, when we arrived, we found we could not even discuss the matter because the Town Attorney had interpreted that we must go to court. Upon consulting one lawyer, we found it would cost $4,000 to $6,000 to appeal the decision, well beyond our means, if we wished to appeal the State Water Resources Commission approval.

In preparation for the town Zoning Board of Appeals hearing, we consulted Dr. William T. Ingram who confirmed Mr. Mood's opinion and recommended we study its effect on the birds and aquatic life in this estuary. Attached is a letter from him dated June 19, 1967, which we were not permitted to submit at the Zoning Board of Appeals hearing.

The Army Corps of Engineers approval was another farce -- as the records will show -- but at least that approval was limited. It can be overturned by State or Federal Water Pollution Authorities in the future.

Since local and state bodies have turned a deaf ear to our pleas, we turn to the Federal Government as a last resort and ask that:

1. The entire Darien waterfront be classed SA instead of partly SA and partly SB since there is no legal cause of pollution in Darien.
2. Swimming water testing in Darien be changed from a single test every 10 days or so to a series of four tests -- high, low, and the two mid-tides -- in a

24 hour period, such a series to be repeated at least five times in each thirty day period during the swimming season and that these tests include virus tests as well as fecal coliform.

3. The town be required to publish the results of any tests below SA quality within one day of their receipt.

4. Such tests be made entirely by an independent source, perhaps the Red Cross.

5. A competent study of pollution possibilities in this area be made, and if such studies are negative, the source of the pollution be found and corrected.

"Mr. and Mrs. Edward McClure
33 Plymouth Road
Darien, Connecticut 06820

"Dear Mr. & Mrs. McClure:

"I appreciate the opportunity of discussing with you some of the problems related to the establishment of a Marina on small estuarial necks of water.

"Connecticut General Statutes, Sections 25-24 and 25-66 are as follows:

'Section 25-24

No person or municipal or private corporation shall deposit any garbage, domestic refuse or other material of like nature, and no person or corporation owning or operating a waterborne craft or vehicle shall deposit or permit the deposit or discharge of any garbage, waste matter or refuse matter of any kind or description whatever, from such waterborne craft or vehicle, in the waters of any river, stream, pond, lake or tidal waters of this State, or shall establish or maintain or cause the use of any place for the disposal of any such material on any land within a distance of fifty feet of the high water mark of any such waters in any place where storm or high water may carry such material to any adjacent waterway. The Commission may require the harbor masters to investigate any source of pollution and to make reports concerning the same. Any person who violates any provision of this section shall be fined not more than $1,000, or imprisoned not more than three months, or both.

'Section 25-26

No person, corporation or municipality shall place in or permit to be placed in, or discharge or permit to flow into, any of the waters of the State, any sewage prejudicial to public health.'

"It is my opinion that proper enforcement of these laws would require a well planned water quality surveillance program throughout the Summer. Your local Health Officer, with the advice and assistance of the State Department of Health, could in all probability establish the technical details and carry out the necessary work if funds and personnel are available.

"It is also a practical necessity that alternate means of handling wastes from small craft be available and easily used. This, of course, means that an adequate shore facility for receiving the wastes accumulated aboard a small craft while at anchor would have to be carefully supervised to insure its continuing use.

"Sincerely, William T. Ingram"

CHAIRMAN KLASHMAN: Thank you, Mrs. McClure.

Are there any questions?

Mrs. McClure, some of the recommendations you made in your statement I think are things that are beyond the scope of the Congress. They are really things calling for action at the state level.

By this, I refer, for example, you made recommendations, as I recall, about the inspection of the bathing beaches, --

MRS. McCLURE: Yes.

CHAIRMAN KLASHMAN: -- on more frequent periods than is currently taking place. This, of course, is dependent upon ~~the~~ your local state water authority and it depends on their having the budget and staff.

MRS. McCLURE: However, the Federal Pollution and Control Authority may recommend, as a basis for the Army Engineer approval of this area directly adjacent to a beach, the bathing beach to be used as a marine area.

May ~~I~~ recommend ~~where the~~ it conditional ~~is~~ without approval, that these tests be made at the expense of the boat owners, if necessary. This was a suggestion of our two experts, not my own original suggestion.

CHAIRMAN KLASHMAN: I am not sure, this is something we will explore, that the Corps of Engineers has the authority to put that type of a condition in a permit.

MRS. McCLURE: It is in the permit.

CHAIRMAN KLASHMAN: No, I am talking about the fact that they will make these tests.

We do, in issuing permits, when we comment on the permit, one of our comments is that, in the case of a marina, that it will be operated so that the standards of water ~~pollution~~ quality will not be violated.

MRS. McCLURE: Yes. Our letter attached indicates that they will be, unless these tests are made.

CHAIRMAN KLASHMAN: We will look at your letter again.

MRS. McCLURE: Thank you.

CHAIRMAN KLASHMAN: Thank you very much.

Are there any further questions?

Mr. Doyle, are you here from the Corps of Engineers?

MR. DOYLE: Yes.

CHAIRMAN KLASHMAN: Do you have any comment to make?

MR. DOYLE: No, I do not have any comments.

CHAIRMAN KLASHMAN: I would like to call on Dr. Benoit, who is our last speaker.

While he is coming up I would like to just get a couple of things into the record.

First, we have a letter from Mr. Arthur W. Sweeton, deputy manager and chief engineer, Bureau of Public Works, The Metropolitan District of Hartford. The whole letter, of course, will go into the record but I would like to just call a couple of things to the group's attention.

(Mr. Arthur W. Sweeton's letter follows:)

"Mr. John S. Farlow, Regional Co-ordinator, National Estuarine Pollution Study, North Atlantic Water Quality Management Center, Edison, New Jersey 08817

"Dear Mr. Farlow:

"In response to your invitation, we offer the following statement for presentation at your public meeting on the impact of pollution on coastal and marine waters, to be held 9:30 A.M. August 19, 1968, in Hartford, Connecticut.

"The Metropolitan District in Hartford County, Connecticut, has the responsibility of providing water and sewerage service in its seven member towns: Hartford, Windsor, Wethersfield, Bloomfield, Newington, East Hartford and Rocky Hill. It also provides those services in other towns to varying degrees. The District is presently (December 31, 1967) providing sewerage service, including pollution control, for a population estimated at 350,853.

"A very brief outline of theDistrict's comprehensive plans is contained in a January 16, 1968 letter statement on behalf of THE METROPOLITAN DISTRICT .... re a CONNECTICUT RIVER NATIONAL RECREATION AREA, presented at a hearing .... on January 17, 1968 to the Director, Bureau of Outdoor Recreation, United States Department of the Interior (copy attached).

"Highlights of the District's comprehensive water pollution control plans can barely be mentioned in a brief letter statement such as this. Details have been and can be furnished to you as needed, as well as to State of Connecticut Water Resources Commission and Health Department, and to U.S. Engineers working on Connecticut River Basin Study.

"Presently, Metropolitan District Commission has four water pollution control plants, three of which provide primary treatment, and one provides primary and secondary. To date the Connecticut River has assimilated and provided the finishing treatment (among its multiple uses) for our MDC effluents, as well as the sewage effluents from other cities and towns on the Connecticut River watershed. To date the river has handled reasonably well this ever-increasing partial pollution load, rarely becoming degraded below accepted standards of 5.0 mg/L (milligrams per liter) of dissolved oxygen.

"In preparation for the ever-increasing pollution load, and acting under State orders, the MDC is proceeding rapidly to design, schedule, finance and construct expanded capacity in each of its plants, together with early chlorination and secondary treatment, to be in operation by 1971. These plants will provide much larger removals of polluted wastes, leaving the river to assimilate a much smaller amount. This should provide our full share of co-operation in the state- and nation-wide effort to substantially improve waste-water pollution control. These plant improvements should carry out our State Water Resources Commission order to maintain Connecticut River quality in Class C.

"MDC urges state and federal effort to improve the assimilative capacity by augmenting low river flows in the Connecticut River. Quoting from our 1963-1964 comprehensive design report, 'The assimilative capacity of the river could be improved by increasing the minimum controlled flows in the Connecticut River during the summer months. It would probably be impractical to attempt to reduce the existing high temperature conditions in the river which are caused mainly by existing industrial water users, although such a reduction, successfully carried out, would also improve the river's assimilative capacity. In this regard, we would like to point out that any additional thermal pollution from either new facilities or additions to existing industries and utilities will further reduce the assimilative capacity of the river and require that the District provide a higher degree of waste-water treatment than otherwise would be the case.'

"Continuing to quote, 'The dissolved oxygen and BOD data obtained during the river surveys were highly erratic in nature, undoubtedly due to the fact that the Connecticut River at Hartford is subject to tidal effects. This means that essentially four times a day a more or less static condition occurs for an hour or so when the tidal direction is changing and the wastes from the Hartford area are being discharged into a body of water comparable to a lake rather than to a river. This condition complicates to a great degree the problem of maintaining Class "C" conditions in the river, particularly in terms of dissolved oxygen.'

"We note a trend toward automatic monitoring of various indications of river pollution. We are pleased that the U.S. Geological Survey has expanded its former river sampling and testing with a monitor installation below Middletown. We expect that adequate monitoring will become a prerequisite for observing and controlling the results of more refined treatment processes.

"Finally, we urge federal financial assistance to older cities for the separation of older combined sewer systems. Although the MDC has already constructed some separation projects in Hartford, it will concentrate on this work more after 1971, when the improved treatment plants are constructed and in operation. Separation of old, combined sewers and lessening of river pollution from overflow of combined sewage should be the next major national effort toward better pollution control. It seems to be too large an effort for local taxpayers to pay for alone; better control of this combined sewer overflow pollution should benefit the nation as a whole.

"Water supply, too, is an MDC function. The Connecticut River will likely become a source of water supply for some towns and cities and the MDC within the foreseeable future. Meanwhile, whatever improvements in Connecticut River water quality can be economically and politically justified will be helpful toward further water purification for water supply use.

"The MDC will be glad to furnish any information we have available, if and as you neet it. And we would like to receive from you any data you collect or generate which would be of interest or use to the MDC.

"Very truly yours, Arthur W. Sweeton, Deputy Manager and Chief Engineer, Bureau of Public Works."

CHAIRMAN KLASHMAN: The second letter I would like to introduce into the record is a letter from Frank Leigner, Jr., Chairman of the Southeastern Connecticut Regional Planning Agency, in which he forwarded us copies of his report. The reports themselves will be put in our files. The letter will be included in the record.

(Mr. Frank Leigner, Jr.'s letter follows:)

"Mr. Lester M. Klashman, Northeast Regional Director, Federal Water Pollution Control Administration, John F. Kennedy Federal Building, Boston, Massachusetts 02203.

"Dear Mr. Klashman:

"I regret that I will not be able to attend your meeting on the pollution of coastal waters in Hartford on August 19th. However, I am taking this opportunity to share with you the studies and concerns of this Agency that relate to this problem. I hope that this letter and its accompanying reports can be made a part of the testimony presented at your meeting.

"The coastal portion of this region is at one and the same time the economic and the recreational center of Southeastern Connecticut. Our major employers -- the Electric Boat Division of General Dynamics, the United States Naval Submarine Base, and the Charles Pfizer Company -- are all located on tidewater. So too, are the area's principal private and public recreation facilities. As a result of this, the danger of pollution can be high and the impact if pollution occurs can be great.

"No one can argue that the condition of the coastal waters in this region is now satisfactory. As you will see from a review of the enclosed report, 'Sewerage Problems,' our coastline is bounded by numerous sources of untreated or inadequately treated sewage.

"To achieve the land use and open space goals outlined in our enclosed reports, 'Recommended Regional Development Plan' and 'Recommended Open Space Program,' the present pollution of our coastal waters must be eliminated and future pollution must be prevented. We believe that this objective can be achieved if the present State anti-pollution program is enforced vigorously and backed-up with adequate State and Federal financial assistance and if local pollution control plans now being prepared are carried through. Incidentally, the present State and Federal sewerage construction grant programs appear adequate to me in terms of the percentage of cost they meet, but these programs will be worse than useless unless hard cash is available from the State and Federal levels when a local community is prepared to correct its pollution problem.

"Our interest in water pollution did not cease with the enclosed 1965 report. Presently, our consulting engineers are working on a plan to coordinate future sewerage construction throughout the region. This plan has two basic purposes: (1) It will meet requirements of the Department of Housing and Urban Development for local eligibility for water and sewer facility construction grants. (2) It will identify and evaluate opportunities for intermunicipal cooperation in providing sewerage systems that could result in lower cost and/or improved operating quality and efficiency. This plan is expected to be completed by November of this year.

"One particularly troublesome problem which can only be solved by the Federal Government is the pollution o

T 6

pollution of coastal waters by the various military establishments. In this region, the discharge of raw sewage from U.S. Naval vessels has been a chronic problem in New London harbor and the lower reaches of the Thames River. While we recognize the value of the military to this area and the technical difficulties in eliminating this type of pollution, exhortations from the Federal level to clean up our waterways ring a bit hollow as long as this source of pollution continues.

"I hope that these comments and reports will be of assistance to you. Should you have any questions or desire an amplification of any point, please do not hesitate to contact me.

"Sincerely, Frank Leigner, Jr., Chairman"

CHAIRMAN KLASHMAN: We have a statement from Richard Carpenter --

MR. RICHARD CARPENTER: Mr. Chairman, I am Richard Carpenter, planning director. I have the original statement here.

CHAIRMAN KLASHMAN: Well, your statement too will be put into the record.

MR. CARPENTER: I have the original here.

CHAIRMAN KLASHMAN: Mr. Carpenter, I think we will let you speak after ~~Mr~~ Dr. Benoit is finished. Just give the answers to the questions at the end, if you don't mind.

~~Mr~~ Dr. Benoit and then Mr. Carpenter will finish up. That will conclude our meeting.

MR. RICHARD J. BENOIT: I am Richard J. Benoit, Chief of Marine Sciences at General Dynamics Electric Boat Division in Groton, Connecticut. I am also Chairman of the Southern New England Marine Science Association.

There is an amply demonstrated need to conserve estuarine resources for multiple beneficial use for the present and even more important for the future. There is a need for comprehensive planning transcending the local government levels. The role of the federal government should be to coordinate the activities of private sectors, local and state governments and to provide financing for programs economically ~~impossible~~ unfeasible in relation to local or single state financial resources. Part of ~~this~~ the federal role should be an intensive campaign of education and propaganda on the urgent need for conservation.

This fall, I will recommend to the Southern New England Marine Sciences Association that we take steps to promote the creation of an interstate agency specifically for the formulation and management of a plan for Long Island Sound and adjacent marine waters.

In the meantime, person to person action is needed badly to preserve and protect the quality of the environment. The federal campaign of education and propaganda is very important in promoting the person to person action and recruiting public support for legislation.

CHAIRMAN KLASHMAN: Thank you very much.

Mr. Carpenter, please.

MR. RICHARD CARPENTER: My name is Richard Carpenter. I am the planning director of the Southwestern Regional Planning Agency in Norwalk.

I might say that Mayor Bruno Giordano of Stamford had indicated to me he hoped he would be here today but was not able to make it.

We are pleased to present the following brief report in response to a letter dated July 8, 1968 from Mr. Lester M. Klashman, Regional Director of the Northeast Region of the Federal Water Pollution Control Administration.

Our report consists of a summary of the present situation, a copy of the Agency position on proposed water quality standards for the regional waters, a description of previous studies at various levels, and finally some brief answers to the general questions concerning estuaries, as posed in the "guidelines" enclosed with Mr. Klashman's letter.

I. SUMMARY

A truly comprehensive study of our estuaries and their ecology has never been accomplished. The scope and extent of such a study makes its conduct by state or federal authorities appropriate.

Such studies and resultant recommendations must be closely coordinated with local and regional land use planning, and in turn, these land use plans should be guided by the ecological and environmental considerations revealed in the estuary studies.

In several instances, public and private sand beaches are situated close to estuaries, and are often within polluted waters. Indeed, some of these areas are the only recreational facilities directly available to low-income areas.

In 1967, there were 11 identifiable tidal marshes along the shore of the South Western Region. In 1954, there had been a total of 17. Six have been lost in thirteen years, and more will be lost if no action is taken to save them.

Within the 40.1 miles of shore line in this region some 15.7 miles are in the form of sand beaches. (or 39%). Of this, 5.8 miles can be considered public (14.5%) and the remainder, 9.9 miles (24.7%) private. These beaches are a vital recreational resource and must be considered in any study of estuarine areas.

In conclusion, a detailed ecological study of the Sound is needed, as well as an action program to conserve appropriate natural areas in and adjacent to our estuaries.

II. PROPOSED WATER QUALITY STANDARDS IN SOUTH WESTERN REGION

Attached is a copy of our letter dated June 7, 1967 urging higher standards for clean water, particularly in harbor areas adjacent to beach recreation areas. Recently, the State Water Resources Commission amended upward their classification of Stamford harbor.

III. PREVIOUS STUDIES

Several studies have been done in the region concerning, in part, pollution in estuaries. Most of the shore towns have expressed the need for stream and river protection in their Master Plans.

A recent report of the Norwalk Planning Commission, entitled "Waterfront", makes a more detailed study than previously done elsewhere. A copy is attached. We are sure that more copies may be obtained from the Norwalk Planning Commission.

The regional planning agency has made studies of land capability and of local plans of development. Copies of maps from the former and of the latter report are attached.

A regional open space inventory is now nearing completion, with an interim open space plan to be completed this fall. The plan will include recommendations for the conservation of tidal marsh areas and natural sand beaches.

IV. BRIEF ANSWERS TO GENERAL QUESTIONS

1. The values of an estuary vary with local land use policy, however, in the past, it is our opinion that too little consideration has been given to the aesthetic and recreational values of these areas. See pad.
2. Estuaries have been damaged by pollution, particularly in Norwalk and Stamford, as evidenced by studies of the State Water Resources Commission. / This is
See pad

particularly important in view of the fact that there are two municipal beaches that front on Stamford harbor. Both of them are very closely related to the low income area of Stamford and are also in the model cities application.

3. The future of our coastal zones should be based on a plan that gives proper and full consideration to recreational and conservational values.

I think these answers are rather general and rather idealistic but I think somehow they have to be said.

4. The best uses of our estuaries are those which do the least violence to the ecology of the area. The scope of the problem seems to call for either a state or federal system of management.

In a recent study, which was done by our planning agency, we found that in 1954 there were 17 identifiable tidal marshes within the limits of the South Western Planning Region. These had been identified by the State Department of Fisheries and Game. We can find only 11 remaining. It may be a rather short time before a few of those disappear to various developments that are now taking place. See pad.

5. The scope of the problem seems to call for either a

state or federal system of management.

I think rather than go into my statement further I would like to leave with you the statement and also copies of some maps and a report on local plans of development in our region.

(The following report was attached to Mr. Carpenter's statement:)

"Mr. William S. Wise, Director, State of Connecticut, State Water Resources Commission, State Office Building, Hartford, Connecticut 06115.

"Gentlemen:

"The South Western Region consists of eight communities: Darien, Greenwich, New Canaan, Norwalk, Stamford, Weston, Westport, and Wilton. Five of these, Greenwich, Stamford, Darien, Norwalk and Westport front on the Long Island Sound. The South Western Regional Planning Agency is concerned with the quality of water and its improvement within the Region.

"The State of Connecticut, Water Resources Commission on 1 May 1967 announced its proposed standards of water quality applicable to the coastal waters and rivers of Connecticut. Maps D-2 and D-3 submitted with your proposals, specifically shows the proposed standards for waters in this Region.

"The attached maps prepared by the South Western Regional Planning Agency's Staff indicate existing and proposed recreation areas as well as the water quality in the various communities in the South Western Region to conform with the State Water Resources Commission's "C" and "D" standards.

"The Commission indicates that "B" standard is the minimum suitable for bathing. In the Commission's proposals for improved water quality, Stamford and Norwalk Harbors, the Byram, Five Mile and Norwalk Rivers are classified as "C" standard, and therefore not suitable for bathing.

"The Agency would like to take this opportunity to point out to the Commission that Stamford and Norwalk have existing and proposed bathing areas where the Commission now would set a "C" standard which would permit these areas to be maintained at a quality unsuitable for swimming. The Five Mile River coursing through the towns of New Canaan, Darien and Norwalk, through mostly residential areas, is presently used for bathing. A "C" standard would prevent this activity."

CHAIRMAN KLASHMAN: Thank you very much

MR. CARPENTER: Thank you.

CHAIRMAN KLASHMAN: Are there any other speakers?

If not, I want to thank all of you very much for coming here today and meeting with us. I thank you also for your patience. The meeting stands adjourned.

(Whereupon at 3:50 p.m. the meeting was adjourned.)

-oOo-